

NORFOLK COUNTY COUNCIL.

ANNUAL REPORT

OF THE

COUNTY MEDICAL OFFICER OF HEALTH

AND

SCHOOL MEDICAL OFFICER

FOR

NORFOLK,

FOR THE YEAR

1909,

BY

J. T. C. NASH, M.D., M.B., C.M., D.P.H.,

Captain R.A.M.C., T.F., S.S.,

Fellow Royal Society of Medicine, Member of Council Royal Institute of Public Health, etc., etc.,

County Medical Officer of Health,

and School Medical Officer.

PART B.

REPORT OF THE COUNTY MEDICAL OFFICER.

MAP OF
NORFOLK

British Statute Miles.
0 1 2 3 4 5 6 7 8 9 10



— URBAN DISTRICTS COLOURED RED. — RURAL DISTRICTS COLOURED GREEN. —
BOUNDARIES URBAN DISTRICTS, PINK. BOUNDARIES RURAL DISTRICTS, BLUE.

INDEX.

	Page
<i>Introductory</i> - - - - -	i., ii., iii.
<i>Brief Notes Geological and Geographical</i> - - - - -	iv.
<i>Preliminary Remarks</i> - - - - -	i and 2
<i>Tabular Statement of Sanitary Districts, Medical Officers of Health, and Date of Receipt of Annual Reports</i> - - - - -	1
<i>Area of County</i> - - - - -	2
<i>Population of County</i> - - - - -	2
<i>Changes in Administrative Officers</i> - - - - -	2

SECTION I.

<i>VITAL STATISTICS</i> - - - - -	3—9
<i>Births and Birth Rates</i> - - - - -	3
<i>Deaths and Death Rates</i> - - - - -	3
<i>Infantile Mortality Figures</i> - - - - -	4 and 7
<i>Infantile Mortality and Insanitation</i> - - - - -	3—5
<i>Weather, Refuse Heaps, Flies, and Epidemic Diarrhœa</i> - - - - -	5
<i>Infantile Mortality and Common Infectious Diseases</i> - - - - -	6

SECTION II.

<i>INFECTIOUS DISEASES</i> - - - - -	10—33
<i>Case Mortality and Zymotic Death Rates</i> - - - - -	10
<i>Enteric Fever</i> - - - - -	10—15
,, <i>and Shellfish</i> - - - - -	10—12
,, <i>and Carriers</i> - - - - -	13
<i>Diphtheria</i> - - - - -	16—21
<i>Scarlet Fever</i> - - - - -	22—24
<i>Erysipelas</i> - - - - -	25
<i>Puerperal Fever</i> - - - - -	25
<i>Tuberculosis</i> - - - - -	25—30
<i>Whooping Cough</i> - - - - -	6 and 32
<i>Measles</i> - - - - -	6 and 32—33

SECTION III.

<i>Vaccination</i> - - - - -	33—35
<i>Cancer</i> - - - - -	35

SECTION IV.

<i>SANITARY ADMINISTRATION</i> - - - - -	36—63
<i>Housing of the Working Classes Acts, 1890—1909</i> - - - - -	36—43
<i>Act of 1909, Regulations under Section 17 (1)</i> - - - - -	38—40
<i>FOOD SUPPLIES—Sale of Food and Drugs Act, 1875—1909</i> - - - - -	44—49
<i>Tuberculous Milk</i> - - - - -	50—51

INDEX—continued.

	<i>Page</i>
<i>Water Supplies</i> - - - - -	51—53
<i>Sewerage and Drainage</i> - - - - -	53—55
<i>River Pollution</i> - - - - -	55—56
<i>Isolation Hospital Accommodation</i> - - - - -	56
<i>Administration of Midwives Act</i> - - - - -	57—58
<i>Ophthalmia Neonatorum</i> - - - - -	58—59
<i>SANITARY INSPECTORS' WORK</i> - - - - -	59
<i>Summary of Work of Sanitary Inspectors</i> - - - - -	60—61
<i>Factory and Workshops Act, Summary</i> - - - - -	62—63
<i>Meteorological Notes for 1909</i> - - - - -	64

MISCELLANEOUS.

<i>Statistical Summary</i> - - - - -	<i>ii.</i>
<i>Notification of Births Act</i> - - - - -	7, 9, 58
<i>Insanitation in relation to Infantile Mortality</i> - - - - -	2, 3
<i>Refuse Heaps</i> - - - - -	5
<i>Flies</i> - - - - -	5, 12, 14
<i>Epidemic Diarrhœa</i> - - - - -	5
<i>Measles</i> - - - - -	6
<i>Whooping Cough</i> - - - - -	6
<i>Health Visitor</i> - - - - -	7
<i>Instruction in Elementary Hygiene</i> - - - - -	7
<i>Shellfish</i> - - - - -	11, 12, 48, 49
<i>Germ "Carriers"</i> - - - - -	14
<i>Secondary Infection</i> - - - - -	14
<i>Co-operation between S.M.O. and District M.O.H.</i> - - - - -	16, 20
<i>Diphtheria Antitoxin Order, 1910</i> - - - - -	17
,, <i>and Schools</i> - - - - -	18
,, <i>and Bacteriological Aids</i> - - - - -	19
<i>Scarlet Fever and Schools</i> - - - - -	22—25
<i>Public Health (Tuberculosis) Regulations, 1908</i> - - - - -	26—30
<i>Whooping Cough and Schools</i> - - - - -	32
<i>Measles and Schools</i> - - - - -	32
<i>Ptomaine Poisoning</i> - - - - -	49—50

<i>SUMMARIES OF REPORTS of District Medical Officers of Health in alphabetical order of Districts—(a) Urban, (b) Rural</i> - - - - -	66—97
--	-------

ADDENDA—TABLES.

Notifiable Infectious Diseases.

Vital Statistics.

In Memory of His Most Gracious Majesty King Edward the Seventh.

It is not inappropriate in the Public Health Report of the County of Norfolk to make reference, with profound respect, to the loss sustained by this County in particular in the death of our late gracious Sovereign, who made Norfolk His county of private residence as a country Squire—and set an example to all Squires in the management of His estates, and particularly in the housing of His tenantry. As a member of the Royal Commission on the Dwellings of the Working Classes, His late Majesty, then Prince of Wales, gave particular attention to the many problems in public health involved in the housing question, and He expressed His conviction that there should be no content “until prosperity in business and all other things desirable to the national welfare are made consistent with national good health.” Dealing with preventable diseases at the opening of the International Congress of Hygiene and Demography, in London in 1891, His late Majesty asked—“Where could we find a family which has not, in some of its members, suffered from Typhoid Fever or Diphtheria, or other of those illnesses which are especially called preventable diseases? Where is there a family in which it might not be asked—‘If preventable, why not prevented?’”

The two diseases particularised had indeed not spared even the Royal family, and from one His late Majesty had suffered in His own Royal Person. At the time of His own illness in 1871 the association between polluted shellfish and Typhoid Fever was unrecognised; and the benefits of Diphtheria Antitoxin were undiscovered and unavailable when the Royal family suffered so heavily from that other dread disease—Diphtheria.

The text of this Report will show what a great reduction in Typhoid Fever incidence has been achieved during the first decade of the Twentieth Century, since the connection between polluted shellfish and Typhoid Fever has become generally recognised; and the science of bacteriology has robbed Diphtheria of nearly all its terrors, provided Diphtheria Antitoxin is early administered. These facts must have been a source of great satisfaction to our late gracious Sovereign, who had said He would always strive to promote whatever might be plainly shown to be useful for the public health.

ADMINISTRATIVE COUNTY OF NORFOLK.

CHAIRMAN OF COUNTY COUNCIL (76 Members):
SIR W. H. BROWNE-FFOLKES, BART., K.C.V.O

VICE-CHAIRMAN:
J. SANCROFT HOLMES, ESQUIRE.

CHAIRMAN OF PUBLIC HEALTH AND HOUSING COMMITTEE (27 Members):
THE RIGHT HONOURABLE THE EARL OF KIMBERLEY.

CHAIRMAN OF MEDICAL INSPECTION SPECIAL COMMITTEE (14 Members) and of
EDUCATION COMMITTEE (36 Members, 9 co-opted):
F. H. MILLINGTON, ESQUIRE.

STATISTICAL SUMMARY.

Acreage	1,303,165
Population (Census, 1901)	313,504
„ (Estimated, 1909)	315,606
Net Annual Value of County	£1,848,488
Id. Rate producing	£6,147
Estimated Uncorrected Birth Rate, 1909	21·12
„ Corrected Death Rate, 1909	10·79
„ Zymotic Death Rate, 1909 (7 chief epidemic diseases)	·33
Infantile Mortality, 1909	82·49

Sanitary Areas—Population Estimates for 1909.

I. URBAN.

Sanitary Area.	Estimated Population, 1909.	Sanitary Area.	Estimated Population, 1909.
King's Lynn M.B. ..	21,584	Hunstanton ..	1,893
Thetford M.B. ..	4,613	Sheringham ..	3,000
Cromer ..	4,175	Swaffham ..	3,300
East Dereham ..	5,545	North Walsham ..	4,345
Downham Market ..	2,500	Walsoken ..	3,624
Diss ..	3,800	Wells ..	2,450

II. RURAL.

Aylsham	16,733	West Lynn	595
Blofield	10,688	Freebridge Lynn ..	11,847
Depwade	19,178	Marshland	11,231
Downham	15,000	Mitford and Launditch ..	18,400
Docking	15,741	St. Faith's	11,114
Erpingham	18,031	Smallburgh	13,744
Flegg, East and West ..	9,909	Swaffham	7,644
Forehoe	11,329	Thetford	9,950
Henstead	10,358	Walsingham	17,500
Loddon and Clavering ..	11,993	Wayland	13,792

INTRODUCTORY LETTER.

TO THE NORFOLK COUNTY COUNCIL.

MY LORDS AND GENTLEMEN,

I have the honour to present my Annual Report as County Medical Officer of Health for Norfolk for the year 1909.

The County may congratulate itself on a series of records in the matter of lessened rates of mortality among infants and among the general population; in a lessened incidence of notifiable diseases; and generally on sure, if sometimes slow, progress in administration making for health.

Among matters dealt with in some detail in this Report the following may be mentioned as of considerable interest—Infantile Mortality, the lessened prevalence of Typhoid Fever and of Diphtheria, Housing Accommodation, Food and Water Supplies.

In April, 1903, your present County Medical Officer of Health, who was at that time M.O.H. of a Borough with a large shellfish trade, propounded the theory, based on his own observations, researches, and deductions, that the connection between Typhoid Fever and polluted shellfish was considerably under-estimated, and that the consumption of shellfish was really a chief factor in the seasonal incidence of that disease. The evidence in support of this theory has rapidly and increasingly accumulated during the last three or four years; and in consequence of measures based more or less on this view, astonishing reductions of Typhoid Fever have occurred in various places—some instances are given in the body of the Report—and Norfolk has shared in this reduction.

The Legislature realises more and more the importance of public health, and the provisions of the Housing Bill of 1909 require that every County Council must in future appoint a County Medical Officer of Health, who now has statutory duties outlined. As distinct branches of public health work, the supervision of which should be regarded as at least in part a medical duty, may be mentioned the administration of the Food and Drugs Acts, the Housing Acts, the Midwives Act, the Protection of Water Supplies, as well as the more obvious Infectious Diseases Acts and Public Health Acts, and the Medical Inspection of School Children.

The County Medical Officers of Health (Duties) Order, 1910, requires that the Annual Report of the County Medical Officer should include sections on the above, as well as a digest of the Reports of the District Medical Officers, and I have as far as possible written the present Report on these lines. A great deal of quiet work has been going on in the County based on information given in my two previous Annual Reports, and I hope that the present Report will prove equally helpful. It only remains for me to express my thanks to the County Committee and to my official colleagues, both at the Shirehouse and in the various Sanitary Districts, for their courtesy and help in the fulfilment of my multifarious duties.

I have the honour to be, my Lords and Gentlemen,

Your obedient Servant,

J. T. C. NASH.

OCTOBER, 1910.

BRIEF NOTES GEOLOGICAL AND GEOGRAPHICAL.

The bracing air of Norfolk is in large measure due to its extensive coast line on the East, North, and North-West, extending to 90 miles of its whole boundary. In the South, the Rivers Waveney, Thet, and Little Ouse separate Norfolk from Suffolk, while in the West the Ouse and the Nene divide Norfolk from Cambridgeshire.

The latitude of Norfolk extends from $52^{\circ} 22'$ to $52^{\circ} 58'$ (North) and its longitude from $0^{\circ} 10'$ to $1^{\circ} 44'$ (East). Generally speaking, the contour of the County is comparatively level, —though in different parts elevations occur to upwards of 200 and 300 feet, especially in the neighbourhood of Cromer, in the North; but no point reaches 350 feet above sea level.

The geology of Norfolk is described in the Memoirs of the Geological Society, and in several interesting and instructive papers contributed by Mr. F. W. Harmer, F.G.S., which should be consulted. It may be briefly stated that underlying the whole County are great beds of chalk, lower, medial, and upper. The lower chalks come to the surface at Hunstanton, being the uppermost stratum in the picturesque coloured cliffs at this place, the upper chalk not being seen here. The strata as seen in the cliffs from above downwards are lower chalk, chalk marl, white chalk (only about 18 inches thick), and red chalk. Beneath the chalks are seen strata of green sand and Sandy Breccia, and in places the Kimmeridge clay, which is the lowermost stratum of all. The chalk beds dip towards the East, until near Norwich their thickness is estimated at nearly 1300 feet.

In some parts of the County the chalk is overlaid by glacial drift, sand, and gravel, forming extensive tracts of heathland, as in the neighbourhood of Thetford. The extreme West of the County beyond the River Ouse (comprised for the most part in the rural district of Marshland) is a portion of the well-known low Fen lands.

Rivers.—In the Eastern part of the County the principal streams are the Waveney, the Wensum, and the Yare (which latter two conjoin just below Norwich), and the Bure, which in turn mingles with the Waveney and the Yare, which have already merged into the large lake known as Breydon Water near Yarmouth. The Norfolk rivers are sluggish, and in the neighbourhood of the sea expand in places into lakes, famous as the Norfolk Broads. The Chet is a tributary of the Yare, the Ant is a tributary of the Bure, as is also the River Thurne.

In West Norfolk the principal rivers are the Great Ouse, the Little Ouse, the Thet, the Nar, the Nene, and the Wissey. In the North the only stream of any size is the Stiffkey river.

Climate.—The climatic conditions of the County are generally dry, the average rainfall (about 25 in. per annum) being barely more than $\frac{2}{3}$ that of the average for England and Wales. The mean annual temperature is about 49° F. The mean Summer temperature is 60° F.

TO THE NORFOLK COUNTY COUNCIL.

MY LORDS AND GENTLEMEN,

I have the honour, as County Medical Officer of Health, to submit the third Report I have written on the general Health and Sanitation of the County of Norfolk. The present Report deals with the year 1909, and is issued as Part B of the Annual Report of the County Medical Officer of Health and School Medical Officer; Part A having already been presented as the Report of the School Medical Officer. The Report of the County Medical Officer naturally involves a critical resumé, as well as a summary, of the Annual Reports of the twelve Urban Districts, the twenty Rural Districts, and the three Port Sanitary Authorities which are comprised in the Administrative County of Norfolk.

I have previously drawn attention to the importance and convenience of the various District Councils having the Reports of their Medical Officers of Health printed. I wish the Reports were all equally worth the cost of printing—but I venture to think that if they were printed in every case, this fact would tend to encourage the authors to bestow every care in their preparation, knowing that printed Reports are more likely to be read and criticised.

The following tabular statement shows the date of receipt by the County Medical Officer of each district Report, as well as its method of presentation, whether printed, typed, or in manuscript. Some local newspapers publish the shorter Reports “in extenso,” and a printed copy then becomes available at the cost of 1d. I have to thank the Clerks and Medical Officers of some of the Districts for having courteously sent me duplicate printed copies in this way:—

Name of District.	Medical Officer of Health.	How Presented.	Date of Receipt by County M.O.H.
Urban Districts—			
Cromer	Dr. Colvin-Smith	Printed	May 28th, 1910
Dereham	„ D. T. Belding	„	March 15th „
Downham Market ..	„ E. G. Wales	„	Feb. 17th „
Diss	„ H. M. Speirs	„	March 1st „
Hunstanton, New ..	„ B. G. Sumpter	Manuscript	Feb. 9th „
Sheringham	„ J. E. Linnell	Printed	March 23rd „
Swaffham	„ A. W. Thomas	Printed News- paper Report	April 1st „
Walsham, North ..	„ J. Shepherd	Typewritten	Feb. 23rd „
Walsoken	„ H. Groom	„	„ 11th „
Wells-next-Sea & Port	„ G. Calthrop	„ and Printed News- paper Report	April 12th „
Municipal Boro's—			
Thetford	„ A. Harris	Typewritten	„ 22nd „
King's Lynn and Port	„ J. R. Kingdon	Printed	March 3rd „

Name of District.	Medical Officer of Health.	How Presented.	Date of Receipt by County M.O.H.
Rural Districts—			
Aylsham	Dr. H. H. Back	Printed	April 20th, 1910.
Blofield	„ H. H. Back	Typewritten	„ 22nd „
Depwade	„ J. C. R. Robinson	Printed	June 11th „
Docking	„ B. G. Sumpter	Manuscript	Feb. 28th „
Downham	„ G. F. Cross	Printed	„ 11th „
Erpingham	„ T. W. Richardson	„	March 23rd „
Flegg, E. and W.	„ W. Royden	„	„ 18th „
Forehoe	„ T. L. Lack	„	May 22nd „
Henstead	„ S. H. Burton	„	April 13th „
Loddon and Clavering	„ E. T. Prior	„	„ 11th „
West Lynn	„ Wm. Webster	Manuscript	Feb. 12th „
Freebridge Lynn	„ C. S. Woodwark	Typewritten	„ 2nd „
Marshland	„ J. L. Forrest	Printed	May 13th „
Mitford and Launditch	„ D. T. Belding	„	„ 18th „
St. Faith's	„ S. H. Long	„	March 4th „
Smallburgh	„ B. D. Z. Wright	„	April 8th „
Swaffham	„ E. F. Rose	„	March 5th „
Thetford	„ A. Harris	„	April 20th „
Walsingham	„ W. H. Fisher	„	March 15th „
Wayland	„ E. F. Rose	Typewritten	„ 12th „
Wisbech Port	Drs. Crofton & Collins	Manuscript	Feb. 4th „

From the above statement it will be found that twenty-one District Councils had the Annual Reports of their Medical Officer of Health printed, as compared with eighteen the previous year; seven Reports were typed (a newspaper reprint of one of these subsequently came to hand), one Report was sent in in the form of a newspaper reprint, while only three were in manuscript (two hectographed) as compared with six manuscript Reports the previous year.

I am glad to be able to note this improvement, and trust that the few Authorities who have not yet authorised the printing of their Medical Officers' Reports will do so next year, and give instructions for them to be printed in uniform size with that already adopted by the majority, viz., 8-in. by 5½-in.

The *Area* of the Administrative County of Norfolk comprised 1,303,165 acres in 1909.

The *Population* of the Administrative County, which in 1901 was 313,504, is estimated (from the Reports of the District Medical Officers of Health) at 315,606 during 1909, indicating an estimated combined increase of 3,145 in the 12 Urban Districts, and an estimated decrease of 1,043 in the 20 Rural Districts. The census of next year (1911) will check these estimates, which are probably not very far out. The only town of more than 10,000 inhabitants in the Administrative County is the Municipal Borough of King's Lynn.

CHANGES OF PERSONNEL IN ADMINISTRATIVE OFFICERS DURING 1909.

At King's Lynn, Mr. J. R. Kingdon, M.R.C.S., was appointed Medical Officer of Health in the place of Mr. H. C. Allinson, M.R.C.S. At Cromer, Dr. R. C. M. Colvin-Smith

succeeded Dr. Legat, who has left the County. At Sheringham, Dr. J. E. Linnell, D.P.H., who has acted as Deputy Medical Officer of Health for some time, was definitely appointed Medical Officer of Health in place of his partner, Dr. W. J. E. Sumpter.

The late Dr. C. B. Plowright, F.R.C.P., completed his thirty-second year of office as Medical Officer of Health for the Freebridge Lynn Rural District. Unfortunately he had to resign early in the present year (1910) on account of ill-health, and his last Annual Report was signed by his son and deputy, Dr. C. T. L. Plowright. By his death the County has lost a very valuable District Medical Officer of Health, who did excellent work in his day and generation. He was a scientist, with a European reputation on "Fungi." He has been succeeded by Mr. C. S. Woodwark, M.R.C.S., as Medical Officer of Health for Freebridge Lynn Rural District Council. In Downham Rural District Mr. S. C. Rigg was appointed a whole time Sanitary Inspector in place of Mr. Parrott (resigned).

VITAL STATISTICS OF THE ADMINISTRATIVE COUNTY OF NORFOLK FOR 1909.

BIRTHS AND BIRTH RATES.

1,346 births are stated to have occurred during 1909 in the 12 Urban Districts, which have an estimated total population of 60,829. This gives a birth-rate of 22·3 for the Urban Districts as compared with 22·68 in 1908.

5,636 births were recorded in the 20 Rural Districts, with an estimated population of 254,777, which gives a birth-rate of 22·12 for the Rural Districts, as compared with 22·94 in 1908. For the whole Administrative County, the *birth-rate* (calculated on 6,982 births among an estimated population of 315,606) is also **21·12**, as compared with 22·88 in the previous year. The downward trend of the birth-rate is unfortunately still in evidence, being in this County 0·76 below the rates in the years 1908 and 1907, which, curiously enough, were identical. The Registrar-General gives the birth-rate for England and Wales as 25·6 for the year 1909. This is the lowest birth-rate on record.

DEATHS AND DEATH RATES—Infantile Mortality.

The annual death rate for each separate district is an average result which if analysed further for its constituent sub-districts would be made up of lower and higher death rates. The figure of infantile mortality is particularly useful in studying local conditions with a view to discovering and remedying such as militate against health.

As an illustration, I may refer to the question of scavenging in Holt, in the Rural District of Erpingham, in which I was consulted as County Medical Officer of Health in September, 1908, though in this connection my reasonings and investigations were made in inverse order. This fact perhaps even accentuates the value of the infantile mortality as an index. Holt is a little town of about 2000 population, the total population of the Erpingham Rural District being estimated at something over 17,000 in an area of 62,375 acres.

On investigating the methods of refuse disposal obtaining in Holt when I visited the town in company with a Sub-Committee of the Sanitary Committee of the Erpingham Rural District (including the Medical Officer of Health and the Inspector of Nuisances), we found that the common method in use in the town was to store both house refuse and stable refuse (including horse dung) in very large uncovered brick receptacles. I measured one which was 18 ft. by 4 ft. by 6 ft. Some receptacles were mere pits dug in the ground and walled up around, so as to increase their capacity. There was no systematic provision for the removal and disposal of this refuse, which was also stored in fairly close proximity to dwelling-houses in small unpaved yards.

The obvious object of such enormous receptacles was to make removal as *infrequent* as possible.

When at infrequent and uncertain intervals these huge receptacles were emptied, their contents were carried to a gravel pit a short way out of the main part of the town, but yet within about 100 yards of a terrace of cottages.

INFANTILE MORTALITY—Insanitation.

After my visit of inspection, I naturally turned with interest to the vital statistics for Holt, Dr. Richardson, the District Medical Officer of Health, having, at my request, kindly supplied me with tables shewing the actual numbers of births and deaths in each parish in each sub-district of the Erpingham Rural District during 1907. On working out the statistics, I was not astonished to find that whereas in the whole Rural District of Erpingham (including Holt) the death-rate for the year 1907 was 13·05, yet in Holt alone the death-rate for the same year was 24·32, or nearly double that for the district as a whole. On working out the infantile mortality statistics the difference was even more striking, for whereas the infant mortality figure for the whole District of Erpingham (including Holt) was only 88·38 deaths per 1000 births, yet, when that for Holt alone was worked out separately, it was found to show the very high figure of 187·5 deaths per 1000 births. This is a terrible infantile death-rate, even in a large overcrowded town. Of course, certain fallacies have to be accounted for and avoided in dealing with all statistics. Amongst them, in connection with infantile mortality, is the relative birth-rate—a high birth-rate conducing to a high infantile mortality—but this possible fallacy could be absolutely excluded in the instance here recorded, for the Holt birth-rate for 1907 was exceptionally low, figuring out at only 14·18, as compared with a birth-rate of 26·3 for England and Wales in that year. Another point of importance was that 1907 proved to be a record year throughout the Kingdom for a low infantile mortality.

N.B.—I have given the above record, of nearly two years since, merely as an illustration. Dr. Richardson, M.O.H., reported for 1909 that Holt had made arrangements for further scavenging, and that to enable back passages and yards to be paved in Holt the Erpingham Council had asked the Local Government Board to confer on them powers under the Private Street Works Act, 1892.

The 32 District Medical Officers' returns indicate that in 1909 4,111 *deaths* occurred in the Administrative County of Norfolk—808 in the 12 Urban Districts and 3,303 in the 20 Rural Districts. Calculating on these figures, we find the *crude death rates* to be for the whole *County* 13·06, for the Urban Districts 13·29, and for the Rural Districts 12·96. I received notice of one death of a Norfolk resident in another county. This does not alter the above rates. The factor for correction for age and sex for Norfolk is according to the Registrar General 0·8262. Applying this factor, the *corrected death rate* for the Administrative County works out at **10·79**, as compared with 11·61 in 1908 and 1907, a satisfactory reduction of 0·82 as compared with two preceding years of already relatively low mortality.

The death rate for the *Registration County*, which includes the City of Norwich and the County Borough of Yarmouth, is calculated by the Registrar General on an estimated population of 478,137 at 14·2, while the death rate for England and Wales in 1909 was 14·5, which was 0·2 per 1000 below the rate in 1908, and was lower than the rate in any other year on record for England and Wales.

No one point that I can have to report upon can be more satisfactory than the marked decline in the *infantile mortality* which characterised the year 1909. In the Administrative County of Norfolk there were registered 576 deaths of infants under 1 year of age during the year. Since there were 6982 infants born in Norfolk in 1909, the infantile mortality works out at **82·49** for the year in the Administrative County, as compared with 102·69 in 1908, and 91·82 in 1907. The figure in 1909 for England and Wales was 109 (by a long way the lowest on record).

In my Report for 1907 I pointed out that there were three main groups of factors which accounted for a high infant mortality:—

(1) Those at work prior to the birth, which would account for all forms of immaturity ;

(2) The improper feeding and clothing of infants—in other words, ignorance or carelessness on the part of mothers—leading to lung and digestive diseases.

(3) *Epidemic* Diarrhœa, which for many years past I have found to be associated with insanitary conditions, and an excessive prevalence of house-flies in the late summer and early autumn, and which again and again since 1902 I have suggested are closely inter-related.

In my Report for 1908 it was my duty to refer to the large increase of deaths among infants attributable to the first of the above-named three groups of factors, and I suggested that they should receive serious investigation on the part of medical men practising in rural districts, particularly of the Medical Officers of Health of rural districts.

The magnitude and importance of this first group is indicated by the fact that no fewer than 28·4 per cent. of the total number of deaths of Infants under one year of age occurred during the first week after birth, and over 45 per cent. before the child had attained the age of one month. As a matter of fact Norfolk has an unenviable position among the counties in regard to the heavy mortality among infants under one month of age due to causes I have placed in the first group. This first group includes the deaths in the Table of Infantile Mortality ascribed to premature birth, and congenital defects, and since 131 premature births resulted in early deaths and 31 other deaths were ascribed in the administrative County in 1909 to congenital defects, it is clear that at least 167 infant deaths out of a total of 576 in 1909, or 28·1 per cent., were due to causes at work prior to the birth of the child. To these should be added at least five deaths, one due to syphilis, and an uncertain proportion of infant deaths during the year ascribed to atrophy, debility, and starvation. The majority of the deaths from atrophy, debility, and starvation would, however, come under the second group, and be due to the improper feeding of children: 128 deaths, or 22·34 per cent. of the total number of infant deaths, were ascribed to these causes.

The ignorance or carelessness of mothers in relation to the improper (insufficient) clothing of their infants while exposing them, or the want of appreciation of the need of fresh air by night as well as by day, or both, would probably account for the majority of the 91 infant deaths which were due to lung troubles, especially those ascribed to pneumonia and bronchitis—though a few of these lung cases might be really referable to a tuberculous cause, which latter was, however, definitely assigned to 15 other infant deaths, or 2·6 per cent. of the total infant deaths.

The third principal factor—epidemic diarrhœa—was not much in evidence in 1909, and indeed is more operative in towns than in rural areas—especially in terraced houses near refuse deposits or stables or dung heaps. 14 deaths in the whole Administrative County were ascribed to diarrhœa in 1909, 15 other infant deaths being due to enteritis and gastro-intestinal catarrh, making a total of only 29 deaths attributable to diarrhœal diseases in the course of the year in the whole County. *The diarrhœa zymotic death rate was only 0·47*

Weather, Refuse Heaps, Flies, and Epidemic Diarrhœa.

Norfolk generally has a low diarrhœa mortality as compared with other counties, and the meteorological conditions during the last three summers have been favourable to man and detrimental to house flies throughout the Kingdom. The low infantile mortality from diarrhœal diseases is probably one of the main reasons for the lowered infantile death-rate throughout England during the last three years. This reduction in diarrhœal mortality is always associated with cool and wet summers—and though this association has been recognised for many years, it was not until the year 1902 that I formulated the theory that the association was probably due to the concomitant lessened prevalence of flies which frequent houses and settle on human food. In hot, dry summers, on the other hand, flies are generally very numerous, and in neighbourhoods adjoining large deposits of house refuse, or in the vicinity of middens, stables, slaughter-houses, and bakeries, they become a veritable nuisance.

In September, 1904, I published a spot map in a Special Report on fatal Epidemic Diarrhœa in a seaside town, showing clearly how the great proportion of the deaths of infants occurred in houses in proximity to a large brick-field, to which hundreds of tons of house refuse were brought by cart and by rail. Large refuse heaps, in warm weather, breed millions of flies, which will invade neighbouring houses, particularly in the direction of prevailing winds. With legs, bodies, and intestines laden with putrefactive germs, these flies in the fly season, that is the hot season, swarm over all exposed food, drown themselves in every uncovered jug or eup of milk, range over every opened tin of condensed milk or piece of sugar on which they can alight, each fly contributing its quota of generally unknown and often unmentionable filth, including its own intestinal evacuations, polluting human food to such

an extent as in a short time to convert, for instance—milk, from a wholesome food into a virulent dangerous poison. Since hand-fed infants are fed almost solely on sweetened milk or diluted condensed milk, they suffer in undue proportion, for these are the foods most attractive to flies, and most grossly polluted by them. Another observation I have made, and which I have not seen recorded elsewhere, is that female flies bearing ova, oviposit in the throes of approaching death, this being a natural instinct. To other pollution, therefore, may at times be added the eggs and possibly the young larvæ of flies.

When once a case of Epidemic Diarrhœa or of Typhoid Fever has occurred in a fly-ridden district, it is easy to see how, unless effective measures of disinfection of evacuations, and the exclusion of flies from the neighbourhood of the patient, are at once satisfactorily put in force, infection can easily be carried through flies and food to other persons in the same house or adjoining houses, or even to houses some little distance away.

Flies caught, painted or otherwise marked, and then released, have been proved to be capable of flying from one block of buildings to another over 100 yards distant. Dr. Monckton Copeman, F.R.S., is at present experimenting on these lines with flies at the huge refuse deposit on Whitlingham marshes. My own opinion expressed in a paper on "Flies as Carriers of Disease," published in the "Journal of Hygiene," September, 1909, is that the extent of the flight of flies is largely determined by the density of the houses in any particular area, each house, and *a fortiori*, each terrace of houses acting as a *place of arrestment*, where food and drink can be found in plenty, and where glass windows keep unreasoning flies in perplexed imprisonment. The instinct or sense of smell in the fly must be wonderfully acute, for it is marvellous how quickly they foregather in warm weather wherever food is to be found. It is important to know that the breeding-places of flies are in collections of fermenting organic filth, and it is likewise important to remember this, especially during Summer and Autumn, in connection with the important questions of scavenging and the disposal of house refuse and night soil.

Common Infectious Diseases in Infant Mortality. Measles and Whooping Cough.

With regard to the deaths of infants under 1 year of age attributable to the common infectious diseases, 3 deaths in the Administrative County of Norfolk were due to Measles, as compared with 25 deaths in 1908, and 14 deaths were due to Whooping Cough, as compared with 73 deaths in 1908, making a total in 1909 of 17 deaths from these two infectious diseases which are so fatal to young infants, as compared with a total of 98 deaths in the year 1908. Measles and Whooping Cough are two infectious diseases which tend to have a cyclical prevalence every second or third year, and after the heavy mortality in 1908 a marked diminution in the number of deaths was only to be expected in 1909. The percentage of deaths among infants under 1 year from the common infectious diseases was reduced from 13·8 in 1908 to 3·3 in 1909.

Having commented on infantile mortality and its various causes for the County as a whole, it may be profitable to compare the relative figures for the Urban and the Rural Districts, though inasmuch as King's Lynn is the only Urban District with a population exceeding 10,000 the differences can hardly be expected to be so prominent as in those counties which have thickly-populated townships as well as scattered rural areas. The total population of the 12 Urban Districts is estimated at 60,829, of which more than one-third, or 21,584, are in King's Lynn, while the total population of the 20 Rural Districts is estimated at 254,777, or rather more than four times the total population of the urban areas.

In forming a comparative table, therefore, it would appear to be desirable and possibly instructive to separate the figures for the Municipal Borough of King's Lynn from those of the other Urban Districts.

Doing this, we find that 469 infants under one year died in the Rural Districts as compared with the 107 in the Urban Districts including King's Lynn, in which Borough 37 infants died.

INFANTILE MORTALITY—Causes of.

WHOLE COUNTY.

RURAL DISTRICTS.

URBAN DISTRICTS.

[illegible]

The three past years may be compared in tabular form thus: giving approximately nearest whole figures—

Infant Mortality Figure or Deaths of Infants per 1000 Births.

	1909.	1908.	1907.
12 Urban Districts (including M.B. of King's Lynn)	79	105	90
<i>King's Lynn M.B.</i>	72	108	92
20 Rural Districts	83	102	92
Administrative County of Norfolk	82	103	92
England and Wales	109	121	118

Comparing the chief causes of mortality and the infantile mortality per 1000 births from each cause, we find as follows for the year 1909 :—

Death rate per 1000 Births from	12 Urban Districts including King's Lynn.	M.B. of King's Lynn.	20 Rural Districts.
Common Infectious Diseases	4·4	9·8	2·3
Diarrhoeal Diseases	4·4	3·9	4·0
Wasting Diseases	39·4	31·3	42·9
Tuberculous Diseases	2·2	3·9	2·1
Bronchitis and Pneumonia	14·1	11·7	12·6

A conclusion which can be drawn from the above figures is that the differences between the small townships of the Administrative County of Norfolk which are designated Urban Districts, as compared with the Rural Districts are not of great consequence. The figures on which the rates are calculated are small, too small for the results of a single year to bear much weight, but so far as they go they indicate a greater proportion of infants dying from wasting diseases in the Rural Districts as compared with the Urban. This is contrary to the experience generally obtained in counties which have large Urban areas, especially manufacturing towns.

Possibly the explanation lies in the semi-rural character of most of the small Norfolk Urban Districts, while the mothers in remote rural areas are conceivably more ignorant as to the management of Infants than their sisters in the small towns.

This ignorance could only be met in some such way as by the adoption of the Notification of Births Act in Rural Districts, notification to be followed up by the visits of a health visitor, armed with the necessary knowledge and supplied with appropriate literature for distribution. Pamphlets on infant feeding, and on measures for the prevention of infectious diseases (including puerperal fever) should, however, be prepared only by medical men with special physiological, epidemiological, and bacteriological knowledge which would enable them to avoid the fallacies, which would be amusing were they not potentially dangerous, found in the booklets and pamphlets sometimes drawn up by Sanitary and other Inspectors, founded on a limited and entirely non-medical acquaintance with the subjects on which they venture to lay down dogmatic instructions. The function of the health visitor is, or should be, strictly limited to imparting knowledge which has been definitely laid down by proper medical authority.

In some towns Education Authorities are starting Evening Schools and additional classes for men and women in hygiene, home nursing, infant care, etc. No doubt in time some methods will evolve for carrying instruction even to remote villages.

The following references to births, deaths, and infantile mortality among the District Reports may be quoted :—

Rural Districts.

Aylsham.—"The birth rate was exceedingly low. The death rate was lower than for the last ten years. Prior to 1906 the average infantile mortality had been 115. For the four years 1906-1910 it has fallen to 86.

"This improvement, extending as it does over a period of four years, must be accepted as an indication of more intelligent care being bestowed on infants in the district, a result of the increased knowledge now possessed by mothers in the feeding and general care of their children.

"The proportion of deaths to a thousand births among legitimate children is found to be only 84, while among illegitimate infants it is as high as 160, or just double. From this it would appear that the illegitimate child starts with a very heavy handicap in the race of life."

Blofeld.—Birth rate about average. Dr. Back thinks that "the unsatisfactory birth rate is accounted for by the depression in rural industries driving young men and women to the towns and abroad." [But the birth rate is rapidly decreasing in large towns as well as in rural areas.]

"The number of deaths of infants under the heading of 'atrophy, debility, and marasmus' will no doubt diminish as the medical diagnosis of the diseases of infancy becomes more accurate and parents of the working class become better educated in the care of infants."

Depwade.—"The birth and death returns show but little deviation from the average."

Erpingham.—The birth rate shows a continuous decline.

East and West Flegg.—The birth and death rates remain very much the same, but infantile mortality considerably less in 1909.

Forehoe.—"The death rate is the lowest I have yet recorded in the past 25 years." The infantile mortality compares favourably with previous years.

Henstead.—Dr. Burton was able to note an increased birth rate, as well as a lowered death rate.

West Lynn, a small district, has "a high birth rate and small death rate." [But the population is far too small for the slightest importance to be attached to these figures.]

Freebridge Lynn.—Here also an increase in the birth rate and a reduction in the death rate is reported.

Marshland.—In this district the birth rate was about the average, and comparatively high, 26.4, while the death rate was also high, 15.5, although the infantile mortality had decreased to 87.5. 8 of the 174 deaths in the district were due to accidents.

Mitford and Launditch.—Birth rate slightly above average for the last ten years. "The infantile death rate is slightly below the average, but 94.9 deaths per 1000 births is nothing to be proud of."

St. Faith's.—The lowest birth rate during the last ten years. The death rate also the lowest recorded since 1901. The infant mortality dropped by more than a half to 43.2. Dr. Long thinks that mothers are now being induced to adopt more intelligent and rational methods in the rearing of their children through the dissemination of information by District Nurses.

Smallburgh.—Birth rate unaltered, and death rate the lowest for many years. The infantile death rate, 71.18 per 1000 births, is also a record. Dr. Wright hopes "with more knowledge on the part of the existing generation of mothers to see this rate lower still. If comforters, long-tubed bottles, and baked flour could be abolished it would greatly help to reduce the infantile mortality."

Swaffham Rural.—"Birth rate 21 per 1000, slightly lower than the average. Death rate 11.6. Infantile mortality 62, average for ten years being 113. This is a highly satisfactory decrease, and is the lowest number recorded during the past twelve years. Of these 10 deaths, 4 were due to premature birth and 3 to debility. A noticeable point is the absence of Bronchitis or Pneumonia as causes of death among infants. The Notification of Births Act, 1907, has not been adopted."

Thetford Rural.—"15 deaths occurred of infants under one year of age, giving an annual infant mortality of 71·7 per 1000 births, as compared with the rate of 92·1 in 1908, and an average of 87·5 during the last ten years. During the year 209 births were registered, giving an annual birth rate of 21 per 1000, the average for the previous ten years having been 22·3."

Walsingham.—"The death rate of 13·2 is about the average for the last ten years. The birth rate of 20·6 is the same as last year, but has only retained this position at the expense of 36 illegitimate births, at the rate of 10 per cent. of the total number of births. The birth rate still represents the lowest recorded in the District. The infantile mortality of 75 per 1000 births is slightly lower than last year, and is satisfactory."

Wayland.—"Birth rate 22·7, slightly higher. Percentage of illegitimate births 8·9 of the total number. Death rate 12·6. Infant mortality 63·6 per 1000 births. Rather more than half the total number of infant deaths come under the heading of 'Wasting Diseases,' 4 being due to premature birth, 4 to debility, and 2 to congenital defects. The Notification of Births Act (1907) has not been adopted in this District. In this connection Dr. Nash, County Medical Officer of Health, says—"It is worth the consideration of those District Councils who are endeavouring to reduce infant mortality by organised effort, whether they should not take steps towards adopting the Notification of Births Act, notification to be followed by pamphlets with advice as to the care and feeding of infants.'"

Urban Districts.

King's Lynn M.B.—"Death rate 11·58; average for previous ten years 14·0. Infant mortality 72·4 per 1000 births. These very satisfactory figures are due to the fact that there has only been a small amount of infectious disease, and possibly also to the large amount of rainfall and absence of extremes of temperature during the last nine months of the year. The number of births was 511, or 26·67 per 1000, being 8 less than in 1908; and 132 marriages as compared with 172 in 1908."

Thetford M.B.—Birth rate 20·5, death rate 12·5, infant mortality 84·2. "There were no deaths from zymotic diseases."

Cromer.—Birth rate 21·7, corrected death rate 7·9 (lowest since 1904, 7·5), infantile mortality 43·7. [In 1908 a very high proportion of premature births caused a very high infantile mortality figure, 218.]

East Dereham.—Birth rate 20, death rate 16, infantile death-rate 117. "Premature births accounted for a third of the infantile mortality; Cancer for about a seventh of the total deaths."

Downham Market.—"The birth rate is 18·8 per 1000 births registered, the lowest birth rate since 1901, the average for the previous ten years being 21·6. Fifty-five deaths were registered in the district, 15 being in the Workhouse, nearly all of very old persons who practically came in to die; 13 of these were non-residents. This makes the general death rate appear unduly high, viz., 22 per 1000; the rate calculated for residents only is 16·8, somewhat higher than the average, which is 15. The deaths were registered of 5 infants under one year of age—3 from effects of premature birth, 1 from convulsions, and 1 from malnutrition; this gives an infant mortality rate of 106·3 per 1000 births registered—last year it was 120 per 1000. The Notification of Births Act is not adopted in the district, nor do I think the district populous enough to need it. The assistance of a district nurse has been procured in the new year (1910), and it is to be hoped that her services and advice will be of much use, particularly in connection with infantile complaints and the feeding of infants."

Diss.—Death rate 14·2 (4 above average, due chiefly to more deaths from Cancer and of old age), infantile mortality 89·2. Three out of the five deaths were ascribed to prematurity under the heading of wasting diseases. Birth rate only 14·7.

New Hunstanton.—There were 20 births, giving a rate of 10·5. This is the lowest birth rate since 1902. Three of the 20 births were illegitimate. Registered deaths 28, nett 21, nett death rate 11·0. The nett average death rate for the last ten years is 9·1. There were 2 deaths of infants under 1 year. Zymotic death rate nil.

Sheringham.—"The death of 9 per 1000 living is the lowest rate since the Urban District was formed in 1901, with the exception of the year 1907, when it was 8·8, and this rate of 9 per 1000 would have been materially lower except for the death of 2 fishermen by accident at sea. The birth rate for the year (1909) was 23·66, higher than in 1908, but below the average for 10 years. We should again like to call attention to the infant mortality rate of Sheringham. This year it is even more satisfactory than in 1907, when it fell to 34·48 deaths per 1000 registered births. During 1909, only 1 death under 1 year occurred, due to injury at birth, and this in 71 births gives us an infant mortality rate for the year 1909 of 14·08 deaths per 1000 registered births. The numbers are too small to be reliable by themselves, but looking back over the records of past years we note an almost progressive improvement in this rate since the Urban District was formed, and in a large measure we think it is due to a coincident improvement in general sanitation which has taken place in Sh ringham. For the rest we are inclined to attribute the reduced infantile mortality to paving of yards, watering of streets, improvements of habitations, cool summers, and the absence of the grinding poverty which induces that benumbing apathy impervious alike to the health of the child and instructions given on its behalf. For Sheringham, the average infantile mortality rate for 7 years is 91·6 per 1000."

Swaffham, Urban.—Death rate 14·5 (average for 5 years 16·5), infantile mortality rate 118·64 (1908, 156·8), birth rate 20·0 (1908, 17·87). No comments by the M.O.H.

North Walsham.—Birth rate 24·3; 12·2 per cent. of births were illegitimate. Death rate 13·5, infantile mortality figure 84·9.

Walsoken.—Birth rate calculated at 32·5, death rate at 11·8, infantile mortality figure 140. The M.O.H. notes the birth rate as large for such a district. [Next year's census will decide as to the basis of population calculation.]

INFECTIOUS DISEASES.

The District Medical Officers of Health courteously complied with a request to make a monthly return to the County Medical Officer of the cases of notifiable diseases which had been officially notified to them during the preceding month, indicating in Rural Districts the particular villages involved. They also indicated, as far as their knowledge went, the prevalence of the non-notifiable infectious diseases. As regards these latter infectious diseases (which are not notifiable under the Notification Act), more accurate information has been obtainable since, on my advice, notification by Head Teachers of Schools was provided for by the Norfolk Education Committee.

The monthly returns are of great value at the time, while the annual returns are chiefly of statistical importance and interest for the purposes of the Annual Report.

The case mortality of notified diseases, in other words, the ratio per cent. of deaths to notifications, is shewn for each District in the large table appended. Abstracted for the whole of the 12 Urban and the 20 Rural Districts respectively, we find the following case mortality for each notifiable disease for the year 1909:—

County of Norfolk, 1909—Case Mortality Percentages.

	Urban Districts.	Rural Districts.
Scarlet Fever	·92	·37
Diphtheria (including Membranous Croup)	5·55	10·21
Enteric Fever	9·09	7·69
Puerperal Fever	0·0	50·00
Erysipelas	0·0	2·17

The low case mortality from Enteric Fever is satisfactory, especially in the Rural Districts, where only 3 deaths among 39 notified cases occurred. [When only two cases of Puerperal Fever are notified, there is nothing in a case mortality of 50·0, which might just as easily have been 100·0 or 0·0.]

The case mortality and zymotic death rates for the Administrative County as a whole were as follows for each disease compared above :—

	Case Mortality.	Zymotic Death Rate.
Scarlet Fever	·53	·012
Diphtheria	9·16	·069
Enteric Fever	8·00	·012
Erysipelas	1·66	·006
Puerperal Fever	50·00	·003

These figures are very satisfactory.

SMALL POX.

There were no cases reported during 1909.

ENTERIC FEVER.

In view of some misconeeption prevailing in certain quarters I feel it is of the utmost importance to briefly review the history of the embargo on Wells mussels, owing to many cases of Typhoid Fever being attributed to them in different places in 1908. For instance, in the summer of 1908 the City of Norwich suffered from an undne amount of Enteric Fever, which the City Medical Officer of Health attributed to the consumption of shellfish. Within a month of my appointment as County Medical Officer of Health for Norfolk, Dr. Pattin, M.O.H. of Norwich, sought my help administratively in connection with some cases of Typhoid Fever which he thought were due to cockles from the Norfolk coasts. On making full and personal investigation into the conditions obtaining at the various places on the coast where cockles are garnered, I was able to exonerate the layings suggested by Dr. Pattin as possible sources of Enteric Fever—though in one instance there was some slight possibility of human pollution. Later Dr. Pattin reported to me that Wells mussels were under suspicion. Early in August the District M.O.H. for Wells, Dr. Gordon Calthrop, requested me to help him in determining the source of an outbreak of Typhoid Fever in that town, 2 cases having been notified at Wells in June, and three cases in July. Dr. Calthrop thought he was able to exclude water supplies, milk supplies and mere insanitary conditions as causes, and he thought the chief danger to the town was in the risk of the spread of disease through mussels which were laid in “the Run” adjacent to the openings of the town sewers.

My investigations entirely confirmed Dr. Calthrop’s surmises. The pollution of the mussel layings was obvious, the mussels lying in many cases within a few feet of the sewer outfalls. But for the fact that Wells does not generally adopt the water-carriage of *excrement*, it would be impossible to find conditions more calculated to pollute shellfish than those which existed in the Wells Run in 1908. The drains of the town for surface water *and slops* terminate in the outfalls above mentioned which immediately abutted on the mussel beds. There is no doubt that urine and occasionally a little fœcal matter from the night use of moveable receptacles is poured down the slop-gulleys. It therefore only needed the presence of a typhoid-infected person or of a typhoid “carrier” in the town to ensure the specific pollution of the mussels through urine poured down the gulleys. It is well known that 25–30 per cent. of typhoid convalescents pass Typhoid bacilli in the urine, sometimes in enormous numbers, and it was therefore quite clear that given an unknown visitor passing typhoid-infected urine, coming to reside in the town, the mussels would be liable to gross and specific pollution.

I therefore informed the Wells District Council that it was “impossible to take any other view” than that the mussels “were liable to serious and occasionally *dangerous* pollution.” In view of the fact that 5 cases of Typhoid Fever had recently occurred in the

town these dangers had been greatly accentuated, and the history of many cases of Typhoid Fever in Norwich being attributed to Wells mussels threw a great responsibility on the local Sanitary Authority, especially when advised by their own Medical Officer of Health, and the County Medical Officer, that the mussels were liable to dangerous pollution. In order not only to scientifically demonstrate bacterial pollution, but to fortify themselves in taking decisive measures I strongly recommended that samples of mussels from the layings should be bacteriologically examined. This was done, and the shellfish were reported on by Professor Hewlett as undoubtedly polluted, and he isolated from the mussels a bacillus "undistinguishable from the *Bacillus Typhosus* Abd."

The Sanitary Authority, wisely advised by their Clerk, Mr. E. B. Loynes, placed an embargo on the sale of mussels from The Run. Though this action necessarily involved a few individuals in monetary loss and hardship, it was urgently called for by the public necessities of the case.

In the meantime, I communicated the results of my investigations to Dr. Pattin, in Norwich, and his further action is an extremely interesting chapter in this particular epidemiological history. He seized and destroyed several bags of mussels brought into Norwich from Wells, and diffused circulars of warning as to the dangers of polluted shellfish. He records in his Report for the year 1908 how there followed a marked reduction in the number of notifications of Enteric Fever in Norwich.

As regards Wells mussels, the mischief was no doubt curtailed by the fact that the town had a conservancy method of excrement disposal. Had it been otherwise, many more cases would have undoubtedly occurred amongst those who partook of mussels, both in Wells and Norwich and elsewhere.

It should be understood that pollution of shellfish such as was found at Wells, does not *necessarily* lead to illness in those who consume them. It generally requires *specific* pollution through an individual carrying *specific* germs for such shellfish to give rise to *specific* disease. Even then all the shellfish do not equally suffer specific pollution—nor do all the persons who eat shellfish from the layings happen to be unfortunate enough to ingest specifically polluted mussels; and finally, individual immunity varies—it being, as a rule, only the more susceptible individuals that acquire the specific disease. Other persons enjoy relative natural immunity or acquired immunity. It is rare for more than 5 or 6 per cent. of persons who eat polluted shellfish or drink polluted water to acquire Typhoid Fever. Were it otherwise, populations would be wiped out in the event of a water supply becoming contaminated: but this we know is not the case. Until an unsuspected typhoid carrier again visits Wells, or in some other way typhoid bacilli gain access to the shellfish, the mussels are not likely to again give rise to Typhoid Fever—though they must, under present conditions, be always potentially dangerous.

Typhoid Fever (Enteric Fever) is a disease which may occur at any time, but undoubtedly has a seasonal prevalence, most marked in this Country in the autumn months. In April, 1903*, I adduced considerable evidence to justify the theory I put forward at that time that this seasonal prevalence was largely due to the larger consumption of polluted shellfish in the autumn months, aided to a small degree by the prevalence of flies carrying specifically polluted material to food during the same season. One thing is certain, viz., that since this theory was formulated in April, 1903, and following on the general oyster scare which occurred about that time, many fewer people consumed oysters, and the trade suffered to such an extent that shellfish merchants found themselves obliged to exercise more stringent precautions; while coincidentally there was a great fall in the notifications of Typhoid Fever, and in the mortality from that disease. Thus, in the Administrative County of London the death-rate fell from 0·12 per 1000 persons living in 1902 to 0·08 in 1903, 0·06 in 1904, 0·05 in 1905, which has been the average figure since. Similarly the case-rate per 1000 persons living in London has fallen from 0·7 in 1902 to an average of 0·3 for the last four or five years.

In the Administrative County of Essex, in which my Reports were widely read, and my views largely acted upon, an even more remarkable decrease in the prevalence of Typhoid Fever is recorded, particularly in the Thames area, which in 1902 had a case-rate per 1000 population of 2·3, as compared with a case-rate of 0·72 for the rest of the County. A

*Transactions Epidemiological Society, 1902-3. Vide also "A Manual of Infectious Diseases," by Drs. Goodall and Washbourn, 2nd Ed., 1908, p. 280.

continued decrease has taken place since 1903, until in 1909 the case-rate was only 0·15 in the Thames area as well as in the County generally—the death-rate per 1000 population having been reduced during the same time from 0·24 for the Thames area and 0·12 for the rest of the County, to ·03 and ·02 respectively.

The reduction in the case-rate and death-rate as regards Typhoid Fever in the town in which my investigations were made and numerous reports written, between 1902 and 1908, can only be described as marvellous, the case-rate having fallen from 3·01 in 1902 to an average of 0·29 in the immediately following years, and ultimately to ·03 in 1909, the death-rate meanwhile going down from 0·37 in 1902 to 0·00 in 1909. In other words, whereas before the pollution of *all* kinds of edible shellfish, including parboiled cockles, was fully recognised as a main source of Typhoid Fever, and before well-organised measures were taken to secure the sale of only unpolluted shellfish, some 90 persons out of every 30,000 population in this town were yearly affected with Typhoid Fever. After public attention had been forcibly and repeatedly drawn to the matter, and active measures continuously taken against the sale of polluted shellfish, in no year since have more than 9 persons per 30,000 population been attacked, while in 1909 only 1 person in 30,000 was notified with Typhoid Fever.

My successor, a very able man, echoes my own convictions previously expressed. In his Report for 1909 he says: “With increased knowledge on the part of the public, and with the greater attention now paid by shellfish merchants to the necessity of purifying before sale all oysters, etc., obtained from doubtful sources, one is justified in the hope that, in the future, cases of Typhoid Fever will only exceptionally occur.”

The above historical facts indicate how justified the Norfolk County Public Health Committee is in maintaining a firm attitude with regard to the sale of shellfish from layings subject to sewage pollution. Further, the relative prevalence of Typhoid Fever in the Administrative County of Norfolk in 1908, when polluted shellfish were being freely sold and eaten in the County, as compared with the incidence in 1909, after public attention had been prominently drawn to the matter in the public press and elsewhere, and an embargo had been placed on certain shellfish to which cases of Typhoid Fever had been traced, furnishes a very significant corollary to the historical facts outlined above, as shown by the following comparative figures for the two years:—

Administrative County of Norfolk.—Typhoid (Enteric) Fever.

	1908.	1909.
Incidence Rate (Case Rate per 1000 population)	0·53	0·15
Zymotic Death Rate from Typhoid Fever (per 1000 population)	0·07	0·01

In other words, there were only 50 notified cases of, and 4 deaths from Typhoid Fever in the Administrative County in 1909, as compared with 167 notified cases and 23 deaths in 1908. A saving of 19 lives from a dreadful form of disease is a great achievement. From a mere financial point of view, accepting the economic value of an average life at £300, this would indicate a saving to the County of the equivalent of £6000 in connection with this disease alone. Other causes of Typhoid Fever which I shall deal with on another occasion are—

- (1) Polluted water supplies.
- (2) Polluted milk supplies.
- (3) Direct infection from a previous case of Enteric Fever.
- (4) Indirect “ “ “ “ (including the carrying of infective material to food by flies).
- (5) Chronic Typhoid carriers.

It is the aim of preventive medicine to ascertain the causes of disease, so as to devise methods and take measures to frustrate such causes and improve or modify the conditions giving rise to them. A few remarks on the comments found in the District Medical Officers of Health Reports may prove useful.

In investigating the causes of disease the Medical Officer who is best equipped with modern methods of research and who is aware that investigation should be carefully planned on comprehensive and judicial lines will most often arrive nearest to the facts. Defective drains being found in a house in which a case of Typhoid Fever has occurred, does not justify the illogical jumping to the conclusion that the defective drains are the immediate cause of the sickness. If after careful inquiry into the other known causes they can be reasonably excluded, one is not justified in doing more in connection with a solitary case of Typhoid Fever than drawing attention to the concomitant defective drainage, and, of course, having it remedied as a potential danger—particularly when a case of Typhoid Fever actually exists in the house draining into defective drains or sewers.

Until quite recently the connection between a case of Typhoid Fever in the same house or family a year or two previously, and fresh cases occurring months or even years subsequently, has not received the attention it deserves. It has been clearly and repeatedly proved that a considerable proportion of persons who have had Typhoid Fever may for months or even years harbour the Enteric Fever germ, and at intervals the bodies of these persons may act as veritable incubators for the bacilli which are periodically discharged in large numbers—and it has been proved that such persons though apparently in good health at the time may give rise to repeated outbreaks of Typhoid Fever—for which at the time no probable cause could be ascertained.

One District Report commenting on a case of Typhoid Fever says the disease was not traceable, though the very next words, in the light of recent knowledge, suggest it may have been a case of belated infection from a previous case in the family, for the report goes on to say “the only noteworthy fact being the occurrence of the same malady in the same family whilst residing at —.” Another Report commenting on two cases in two families which had their water supply from a well in common which was stated to be quite satisfactory, casually finishes up with what is really a very significant fact, “Mrs — daughter had Enteric 12 months before.” Now, though one of these two cases in 1909 gave a history of eating shellfish, the other did not; a sample of the well water in common use was examined bacteriologically and reported as fit for drinking: there was therefore insufficient evidence to definitely incriminate either the shellfish or water, but the fact that a year previously an inmate of one of the two adjoining cottages had had Typhoid Fever opens up new possibilities, which could only be determined by a strict inquiry on bacteriological lines into the question of the daughter of one of the cases being a “carrier” of the typhoid bacilli. The topographical examination of the common well indicated that it could not be absolutely dismissed from suspicion, and might indeed have acted as the vehicle for carrying the causal bacilli from an infected person or “carrier” under certain conditions.

Where several cases occur in one house as recorded at Upper Sheringham in the Erpingham R.D. in the Medical Officer's Report for 1909, the dates of onset will generally indicate whether they had one common cause, or whether, as is more usually the case, infection spread from one case to another. Where intervals of 10 or 12 days occur between a first and subsequent cases, there can be little doubt that the later cases are secondary cases receiving infection from the first. An instance of this kind has recently occurred in a village in North-West Norfolk.

One Report suggests that flies are the chief agents in the distribution of Enteric Fever. This cannot be accepted as a general proposition—and in this country flies do not play so large a part in the spread of Diarrhoeal diseases as they do in the Tropics. Still there can be no doubt that flies do occasionally spread Enteric Fever even in England in warm seasons in districts where conservancy methods are in vogue.

Urban Districts.

Cromer.—One case “probably contracted in Norwich.”

East Dereham.—Two cases.

Downham Market.—No cases.

Diss.—One case (imported).

New Hunstanton.—One case (not traced).

Sheringham.—No case of Typhoid since 1905.

Swaffham.—No cases.

North Walsham.—One case (not traced).

Walsoken.—Two cases.

Wells on-Sea.—"There were no cases of Typhoid during 1909. The epidemic in 1908 by drawing attention to the pollution of the Mussel lays by the town sewage has unfortunately practically extinguished an important industry of the town, and it is a cause of very great regret that, after the consideration of several schemes for diverting the sewage, the Urban Council have been unable to recommend the adoption of even the least costly."

Thetford Borough.—No cases.

Kings' Lynn M.B.—"There have only been three notifications of this during 1909, all of which have been of a mild type. I am unable to suggest the source of infection in any of the cases. On investigation it was proved conclusively (!) that shellfish could not have had to do with the first two, nor could I get any history of 'carrier' cases. As regards the third case, the man evidently contracted the disease outside the borough. There was also one death from Typhoid Fever in January, no doubt notified in 1908. In connection with this disease it will be well to state that during the latter part of the year sundry samples of cockles and mussels, and also of the deposit upon which they grow, were obtained and bacteriologically examined by an expert. The report was excellent, and no trace of the typhoid bacillus could be found. In the summer I went by invitation of the Chairman of the Fishery Committee and inspected the lays, and it appeared to me that everything possible was being done to keep them free from contamination."

Rural Districts.

Aylsham.—No case.

Blofield.—One case of Enteric Fever was notified from the County Asylum. With this exception the district was entirely free from this disease.

Depwade.—One case at Earsham was removed at once to Norfolk and Norwich Hospital. A noteworthy fact was the occurrence of the same malady in the same family whilst residing at Bungay.

Docking.—"Eight cases. In three cases—one at Burnham Deepdale and two at Brancaster Staithe—reported at end of May, there was no history of eating shell fish, and the drinking water was apparently satisfactory. One child had, just before becoming ill, eaten part of a raw potato picked up in the garden where manure had not long been put down. July 8th, one case reported at Brancaster: Patient often ate cockles in common with other servants in the same house. The well was apparently satisfactory. As the house drain discharged into a cesspool, the overflow from which passed through the sewer on to the marsh, I advised that excreta be disinfected and buried in the garden; also that the cesspool be emptied, contents buried in the garden, and the cesspool disinfected. On your Council's request I went to Brancaster Staithe, took some cockles from the lays which had supplied those eaten by this patient, and had them bacteriologically examined. They were pronounced safe for food."

"On October 8th I went to Stanhoe to enquire into two cases there. (1) C—S—. No history of eating shell fish, but had water from same well as following case. (2) Mrs. ——. Ate cockles May 7th; not well from May 14th, when she was confined. Notified as suffering from Enteric Fever on June 7th. The well from which the drinking water was obtained for both these houses was in a farm yard close by. The well was quite satisfactory, but a drain conveying house slops passed within six feet, and there was a privy vault within twenty feet. I advised the drain be laid in concrete and the privy vault done away with. A sample of water was taken for bacteriological examination, and declared to be of good quality for drinking and domestic purposes. Mrs. W—'s daughter had Enteric twelve months before."

Downham.—One case.

Erpingham.—"Three cases occurred at Upper Sheringham in September—a mother and two children, who were non-residents. I could find nothing in the house and its surroundings to account for the outbreak. They appeared to be perfectly sanitary, and I conclude the disease was contracted elsewhere. The mother died."

East and West Flegg.—Four cases.

Forehoe.—No case.

Henstead.—"Two cases. One in Keswick due to defective house drains, and one in Rockland probably contracted in Norwich."

West Lynn.—No case.

Loddon and Clavering.—One case.

Marshland.—One case at Upwell.

Mitford and Launditch.—Three cases.

St. Faith's.—"Two cases. A case occurred in the Castle Inn, at Wroxham, where the drains were under repair at the time. This work is now completed. An analysis of the water from the pump shows this is good drinking water."

Smallburgh.—"Two cases in the Ludham sub-district. One of the Enteric cases occurred in a van. The gypsies were travelling the district from Yarmouth, and put up at Horning Staithe, where the case was diagnosed. As there was no isolation hospital to move the case to, and the patient too ill to be taken far, the van was allowed to remain and the case treated throughout in the van. Great care was taken and disinfectants used freely, and there was no spread of the disease. Had the case occurred in the Summertime, when the hotel and village are full of visitors, the result might have been very serious, and showed how very necessary it was to have somewhere in which to isolate such cases."

Swaffham.—"There were three cases of Enteric Fever, all at Ashill, occurring in June, July, and August, and apparently quite unconnected with one another. I could obtain no information as to the possible source of infection in the first case; in the second, the water from a well used by the inmates of three other cottages was said to be polluted. I visited the premises, and found vault privies situated very close to the well, a drain leading to a cesspool was blocked and in a defective condition; the well itself was not properly constructed, and liable to be polluted. The suspected water was examined chemically and bacteriologically, and found unfit for drinking purposes. The owner of the property was at once advised, and the matter taken in hand. No other case of illness in these cottages was reported. In the third case there was a vague history given that the patient, who had been unwell for a fortnight before the disease was recognised and notified, had eaten some whelks three or four days before first feeling ill, but no further definite information was obtainable. No other case occurred."

Thetford.—One case.

Walsingham.—There were only three cases notified during the year, this being the lowest number ever recorded in the district.

DIPHTHERIA.

In connection with this disease also there was a happy reduction both in incidence and fatality in the Administrative County of Norfolk in 1909, as compared with 1908. I have no doubt this is largely due to the increased and extended use of bacteriological aids to diagnosis and the co-operation of the School medical service and public health service (as in

the outbreaks at Wood Dalling, Briston, Marsham, Wreningham, and Marham), in controlling the release of convalescents (especially School children) after recovery, as well as to the more early and more frequent use of Diphtheria antitoxin in cases of Diphtheria. The protracted infection in a house in Stalham, recorded in the Swaffham Rural Report, would not have occurred had bacteriological control of the first patient and contact been undertaken. There is, therefore, still room for further improvement in this direction, but the figures for 1909 are very encouraging.

Whereas in 1908 there were 350 notifications of Diphtheria, in 1909 there were only 240 notifications in the Administrative County of Norfolk. As against 52 deaths in 1908, there were only 22 deaths in 1909, the incidence rate falling from 1·10 to ·76, and the death rate from this disease from 0·16 in 1908 to ·069 in 1909. Only 3·5 per cent. of the 240 cases were treated in isolation hospitals, viz., 7 of the 20 cases which occurred in Walsoken and 2 of the 25 cases notified in the Forehoe Rural District.

The following extracts from the Reports of the District Medical Officers of Health indicate what success has followed on the fairly general adoption of controlling infected Diphtheria cases by bacteriological examination on the lines I indicated to the Sanitary Committee in my Quarterly Report dated September, 1908, a copy of which was sent by the County Sanitary Committee's instructions to every District Council's Medical Officer of Health. It is very gratifying to note how readily the various District Councils authorised their Medical Officers of Health to make the necessary arrangements for securing bacteriological aid—and they in turn must feel gratified at the greater control they, as Sanitary Authorities, can now exercise over the prevention of the spread of Diphtheria. To the Medical Officers of Health the communities are indebted for the extra time and trouble they have taken in connection with this preventive work.

I am glad to note that "The Diphtheria Antitoxin (Outside London) Order, 1910," issued in August of this year, sanctions the provision by District Councils of temporary supplies of Diphtheria antitoxin, and authorises reasonable compensation for all action taken by the M.O.H. in the execution of the Order.

Rural Districts.

Aylsham.—"Twenty-two cases of Diphtheria notified during the year. For the 10 years (1897—1906) the average number of cases notified had been 4, but during the last 3 years the average has risen to 25. To some extent, perhaps, this remarkable increase in the prevalence of Diphtheria is more apparent than real, and may be the result of the facilities only recently enjoyed by medical men practising in the district for obtaining bacteriological aid in arriving at a correct diagnosis in difficult throat cases. In former years, no doubt, many children suffering from what were supposed to be ordinary sore throats were the subjects of Diphtheria.

"From the table showing the distribution of Notified Infectious Disease, it will be seen that Diphtheria appeared in 8 parishes. The 22 cases may, however, be divided into 3 groups:—

1. The Wood Dalling cases, with which must be associated 2 at Thurning and 1 at Guestwick.
2. The Marsham and Buxton cases.
3. Sporadic cases.

"The Wood Dalling outbreak was by far the most serious, for not only did it comprise just one-half of the cases notified in the district, but 3 deaths resulted.

"The first case was notified to me on January 11th, and the child died the next day. On visiting the village I found that Diphtheria of a comparatively mild type had been prevalent among the children for at least two months. Three cases of Diphtheritic Paralysis were discovered, and swabs taken from throats of convalescent children who had received no medical treatment showed the presence of Diphtheria bacilli.

"The School was closed from January 12th to February 22nd, and the building thoroughly disinfected. Care was taken on the re-opening of the School that no child who had been found to have suffered from Diphtheria should be admitted until shown by bacteriological examination to be free from infection.

“As might have been expected from the fact that the disease had established itself for two months before discovery, the epidemic, though controlled, was protracted. Cases were notified at long intervals far on into the Summer, and one case, though no clinical signs were observed, was discovered bacteriologically and notified in November.

“As an outcome of this epidemic, arrangements have been made with the medical men practising in the district for bacteriological examinations to be made, at the cost of the Rural District Council, of swabs taken to aid diagnosis in difficult cases. It is, therefore, exceedingly unlikely in the future that an outbreak of Diphtheria will remain so long unrecognised in this district again.

“The Marsham group only numbered 3 notified cases, but the 4 cases in the adjoining parish of Buxton probably derived their infection from this source, and should therefore be included in the group. The chief point of interest in this outbreak has been the very long period during which some of the patients have retained the infection in their throats.

“Since the beginning of this year the systematic examination of swabs taken from the throats of school children has been carried out in the district in order to ensure that no child who has suffered from Diphtheria should return to School until free from infection. On the recovery of a child from Diphtheria a swab is taken and examined. Should it be found free from Diphtheria bacilli, the child at the end of another fortnight is allowed to return to School. If, however, as is often the case, the swab shows the presence of Diphtheria bacilli, a second swab is taken at the end of a month, and should this not give a negative result a third swab is taken, and so on, month by month, until a negative result is obtained. In one instance a child has been examined, at intervals between July 30th, 1909, and January 9th, 1910, on four separate occasions, and each examination has shown Diphtheria bacilli to be present. The child has consequently been absent from School for more than half a year. In nine other children the second swab taken has given positive results, and they have accordingly been kept at home for about three months. It therefore frequently happens, in a village where there has been a small outbreak of Diphtheria, as at Marsham, that three or four children will remain away from School for lengthened periods. These children may be perfectly well in health, and it is difficult to persuade parents, and sometimes even the School authorities, that it would be highly improper for them to mix with other children in School or elsewhere.

“It is practically impossible to keep these infected children from playing in the roads with other children, and no doubt in this way the disease is often spread. But it is quite easy, and a clear duty, to prevent such children from carrying infection to Schools. A parent may, with the exercise of care, be able to keep his child from contact with infected children in the roads, but it would be an obvious injustice to compel him to send his child to School to mix with children in whose throats the germs of a deadly disease are known to exist.

“The question will naturally be asked—can nothing be done to rid the throats of these children of the bacilli which are shown to infest them for so long a time? I am of the opinion that, with Diphtheria, the disinfection of throats is of far greater importance than the disinfection of schools and cottages. Up to the present nothing has been done in this district in the direction of throat disinfection, partly because until recently the infection was supposed to disappear with recovery of the patient, and partly because it has been no one's duty to see that throat disinfection is carried out. The working-class parent can barely afford to pay for the medical treatment of a child suffering from Diphtheria, and, already indebted to the doctor, would be unwilling to incur further expense for the benefit of others. The necessary treatment would involve the repeated painting of the throat with strong antiseptics, and in some cases, where the bacilli lie hid in the crypts of enlarged tonsils, the removal of those organs might be necessary. Short of this, however, some good might be done by providing antiseptic gargles and lozenges for the disinfection of throats in the same way as disinfectants are provided for the disinfection of cottages.

“I trust that this suggestion to provide, at the public expense, gargles as germ destroyers, an entirely preventive measure, will not be considered as having anything to do with the totally different question of the free medical attendance of School children.”

Blofield.—“Of the total of thirteen cases, three were notified from the Parishes of Acle, Freethorpe, and Great Plumstead, and the disease was limited to the primary case. The

remaining ten were all connected with Thorpe St. Andrew, as the child living in the adjoining Parish of Postwick attended the Thorpe School. These ten cases, therefore, call for examination. There had been no Diphtheria in Thorpe in the previous year. As to time, the cases were spread over a lengthened period. The first was notified in January; the village was then free till June, when four cases occurred in a family, the children of which did not attend the village School. In September a child who had attended school was discovered by bacteriological examination during convalescence to be suffering from Diphtheria. The remaining four cases were notified in the month of November and were undoubtedly School cases, the infection being probably derived, either directly or indirectly, from the case notified in September. The diagnosis was confirmed in each instance by bacteriological examination.

“Arrangements have been made with Dr. Claridge for the examination of swabs taken by medical men practising in the District when it is considered desirable to confirm a diagnosis. Swabs are also taken from children of school age during convalescence to ensure that no child shall return to School until shown by bacteriological examination to be free from infection: a small fee being paid in each case to the medical man taking the swab. To still further prevent the spread of the infection of Diphtheria prophylactic injections of anti-toxin are freely given, on my recommendation, at the cost of the Council, by the doctor attending the case.

“The success attending this course of action is, I think, well borne out by the history of the incidence of the disease in the District during the past year, but perhaps an account of a single example will render this still more evident. On August 27th a child aged 4 years was notified from Freethorpe as suffering from Diphtheria. The family consisted of the man, his wife, and six children aged 12, 11, 6, 4, 3, and 2 years. The sick child was isolated in a small back bedroom over the door of which was hung a carbolic sheet. The diagnosis was confirmed by bacteriological examination, a large number of Diphtheria bacilli being found present. Prophylactic injections of anti-toxin were given to the other five children. On the 29th of September another swab was sent for examination in which a few bacilli of Diphtheria were found. On the 18th of October a third swab was examined and reported to be free. The small bedroom which had been occupied by the sick child was then fumigated with Formic Aldehyde vapour and the floor washed with Jeyes' fluid. The rest of the family, after a short interval, were allowed to return to School. Although the cottage was small and overcrowded by a large family, the precautions taken proved effectual in limiting the infection to the child originally attacked.”

Depwade.—“Two notifications. Starston, one case in an adult, contracted outside the District. Dickleburgh, one case, child of five, isolated case, nothing suspicious in house, well wanted cleaning.”

Docking.—“Three cases. All had swabs from their throats examined and were declared free from diphtheria bacilli before they were allowed to return to School. In one case a second examination had to be made. A case of Diphtheria was reported by the School Mistress of Burnham Overy Staithe in February. I ascertained that a doctor was attending, and as the case was not notified, I concluded the case was not Diphtheria.”

Downham.—“Twelve cases. In my last report I referred to the freedom from this disease which we had of late years enjoyed; but I also pointed out the liability to its return if care was not exercised by occupiers in keeping the surroundings of their houses free from decomposing filth. There have been two outbreaks during the past year, both of which, however, we were able to check before they assumed any serious proportion.

“The first occurred at Southery in a family whose surroundings were such as to encourage this disease. In this case the disease was undoubtedly contracted from a playmate who had been ill with a bad throat. Immediately on being notified of the outbreak I made investigations, and a bacteriological examination of this child's throat showed she had had Diphtheria. Six cases were notified, and two proved fatal. Every precaution was taken, and none of the children were allowed to return to School until a bacteriological examination of their throats showed they were free from diphtheritic germs.

“The other outbreak, which at first seemed of a more serious character, occurred at Marham. At the beginning of December I was informed by the School Correspondent that,

on account of the prevalence of sore throats, a number of children were absent from School. Prompt investigations were made. Since the opening of the Schools after the harvest holidays there had been a succession of children absent from colds and sore throats, and in November this became more noticeable, until in the first week in December I was notified of the fact, by the Managers asking me to close the School. I immediately went over, and in conjunction with the local doctor examined the suspicious cases, with the result that four cases were notified as Diphtheria. The matter appeared so serious that we obtained the services of a trained nurse (which action you afterwards readily sanctioned). The School was closed, with the approval of the School Medical Officer, who came from Norwich to consult with me. Six cases were notified, of which one proved fatal.

“I was able to trace the disease to a child, as far back as August, who returned to School before she was quite recovered. A list of 24 absentees during September, October, and November was obtained, and the homes were all visited. Swabs were taken in the most suspicious cases, and from the bacteriological report, in one case, it was advisable to exclude one family. The outbreak occurred just before the Christmas holidays. When the School reopened in the ordinary course the County Medical Officer of Health and myself examined most of the children, and besides the notified families it was only found necessary to exclude the other family above referred to. Six cases in all were notified. One child died of Diphtheritic Paralysis. This case was not notified till after a confirmation had been obtained by the bacteriological examination of the throat, some two weeks after the onset of the disease.”

Erpingham.—“I am glad to report a very great diminution in the cases of this dangerous disease, only 4 cases having been notified—Holt 1, Hempstead 1, Kelling 1, Weybourne 1. One death occurred at Holt.”

East and West Flegg.—Three cases.

Forehoe.—“Twenty-five cases. Diphtheria has been prevalent in the County during the year, and scattered cases have occurred in this District in the following Parishes: Wymondham, Silfield, Marlingford, Brandon Parva, Morley, Sutton, Wattlefield, and Spooner Row. There was no connection to be traced between the cases occurring in Wymondham, Marlingford, and Brandon Parva. But the Parishes of Morley, Sutton, Wattlefield, and Spooner Row are contiguous, and the children of Sutton, Wattlefield, and Spooner Row attend the same School at the latter place. Ten cases occurred in these Parishes, and the disease threatened to become very serious, and I advised the closure of the School at Spooner Row, as I believed it to be a possible centre of infection. I reported to the Council and also to the Local Government Board on the closure of this School. Every effort was made to stamp out the disease. A careful inspection of all the children was made, and also of the sanitary conditions of the School and Villages. Isolation was strictly enjoined. I wrote to the medical men in attendance, asking them to submit all convalescent patients to a bacteriological examination. Enquiries were made into the water and milk supply. A wet and sunless Summer greatly favoured the progress of the disease.”

Henstead.—“Diphtheria occurred in 8 Parishes—18 cases, 8 in Wrenningham, where the disease was lurking for several months, and oddly enough, months after one important case was supposed to be free from infection the special bacilli were found in a swab from the throat. Three cases in Shotesham, which were determined after a bacteriological examination, the cases being suspected by the School Medical Officer when he formally inspected the School. I have no doubt that by this means many other cases were prevented occurring in children attending this School. Two cases in Surlingham, also detected by bacteriological examination, and one each in Framingham Earl, Hethersett, Stoke Holy Cross, Poringland, and Flordon.”

Loddon and Clavering.—Eight cases.

Freebridge Lynn.—“With regard to cases of Diphtheria recurring from time to time in a Village with apparently satisfactory sanitary conditions, the most probable explanation is that there are among the inhabitants certain individuals whose throat mucous membranes are

suitable media for the Diphtheria bacillus to grow upon, although their general health is not affected thereby. The Diphtheria bacilli from these throats may, however, affect other persons and produce the clinical signs and symptoms of the disease. As an instance of this, cultures were taken from a child who presented none of the macroscopic appearances of Diphtheria on five occasions of fortnightly intervals, and in each instance the Diphtheria bacillus was found to be present. This child therefore, though apparently well and healthy, was capable under certain conditions, which are unknown to science, of infecting persons with Diphtheria."

Marshland.—"Eight cases were notified, compared with 24 in 1908, and 50 in 1907. They were distributed as follows:—Terrington 1, Walpole 1, Upwell 2, and Emneth 4. There were two fatal cases.

"As you have now agreed to my obtaining a bacteriological report on swabs from the throats of children convalescent from Diphtheria, before they are readmitted to School, a more effective control of the disease will be possible."

Mitford and Launditch.—"Seven cases. What would undoubtedly have proved an epidemic of Diphtheria at Shipdham was averted by the timely action of the Assistant School Medical Officer, Dr. Campbell. When inspecting the School he saw a suspicious throat, and, on having a bacteriological examination made, it proved to be Diphtheria. Of course the child was excluded from School, and only one other case occurred there during the year, and that was direct infection from the first case. The other five cases were in four different villages, and we had no further trouble."

St. Faith's.—"Eighteen cases. Fifteen throat swabs were bacteriologically examined. Dr. Long records an instance where a husband showed evidence of Diphtheria two days after his wife was found to have the disease.

Smallburgh.—"Seven cases; one in the Smallburgh, four in the Stalham, and two in the Ludham sub-districts.

Swaffham.—"There were 9 cases of Diphtheria, as against 38 last year: 5 cases occurred at Little Cressingham, 4 being in one family; 1 at Ashill, and 3 at Stalham. With regard to these 3 cases at Stalham, I note that one member of the affected family was notified as suffering from Diphtheria in December, 1908, and again in July, 1909, while two other cases in the same house occurred in November and December."

Thetford.—"No cases.

Walsingham.—"Eighteen cases. There were several cases in the early part of the year remaining from the long-drawn-out epidemic in West Raynham, and in October there was an outbreak in Stiffkey, which was the subject of a special report made to the Council in November; with the aid of a nurse, who was able to help the enforcement of the isolation of the patients and contacts, I am glad to say that the epidemic was confined solely to the original centre of five houses.

"A small isolation cottage would have been of great assistance and simplified precautionary measures, but none was obtainable. The schools were not closed, but the children from outlying villages were kept away."

Wayland.—"There were three cases of Diphtheria notified. The first case occurred in August, at Besthorpe, the infected house being situated just within the boundaries of this district, and was undoubtedly imported from the neighbouring village of Spooner Row, where there was at this time an outbreak of the disease. The other two cases occurred in New Buckenham; the first in September, which unfortunately terminated fatally in two days. I visited the premises and made investigations, finding some insanitary conditions in the surroundings, which, however, cannot be held responsible as causing the disease. The second case was reported a month later in a different house, and I again visited. Later in October, on account of rumours, which proved unfounded, regarding the alleged prevalence of the disease, Dr. Nash made an inspection with me of the surroundings, and took swabs from the throats of two children; these proved negative. No further cases were notified."

SCARLET FEVER.

This is a disease the bacteriology of which is still uncertain, and which sometimes occurs in very mild form, being readily overlooked by parents and occasionally even by medical men. It is therefore not capable of being placed under quite such scientific control as Diphtheria, the bacteriology of which is established. During 1909 there were 753 cases notified in the Administrative County of Norfolk, giving an incidence rate of 2·38 as compared with 1·89 in 1908. The zymotic death rate, however, was only 0·01 as compared with 0·02 in 1908. Swaffham Urban District was again, as in 1908, severely affected, having a case rate of over 14 per 1000 population. Cromer was unfortunately severely taxed during the seaside season. Among the Rural Districts the largest proportion of cases occurred in Depwade. North Walsham and Flegg escaped altogether. 93 per cent. of the Cromer cases and 9 per cent. of the Walsoken cases were removed to hospital. School closure in an Urban District should hardly ever require to be resorted to, if sufficient medical supervision and inspection of the children is arranged for.

North Walsham Urban and Flegg Rural Districts were fortunate in having no notifications of Scarlet Fever during the year.

The only Districts in which any Hospital Isolation was attempted were the Urban Districts of Cromer and Walsoken. In the former town 93 per cent., and in the latter 9 per cent. of the notified cases were removed to an Isolation Hospital.

Urban Districts.

Cromer.—Dr. Legat reports: “In June the notifications of Scarlet Fever rose to six—in July to eighteen. In August they fell again to twelve, and in September, up to the 24th, there were but five cases notified. There is no doubt that the infection was in the County Council Schools, and had it been practicable to close them, much of the outbreak might have been prevented. I did suggest to the Sanitary Committee the advisability of such a step, but they were unwilling to adopt it. However, the Schools were closed a week earlier, and I gave the Managers written instructions as to what I thought would be a satisfactory way of cleansing and disinfecting them.”

Downham Market.—Dr. Wales says: “The first case of Scarlet Fever occurred on 19th January, having clearly been contracted at Lynn. The patient only came home because he was ill and was then found to be suffering from Scarlet Fever; he was carefully isolated and every precaution taken. I do not think any subsequent cases had any connection with this one. On 1st March two cases were notified in Priory Terrace, in different houses. Both children were day pupils at the same School and constant companions; I could find no suspicious cases at the School, no child peeling, and none lately absent through illness; the day pupils were all kept away and the School isolated. On 2nd March one boarder at the School was affected, one day pupil and this child's brother (3 cases in all). On 5th March a boy at the Workhouse was discovered in a peeling condition and had evidently had the disease some weeks previously, though he had never been noticed in any way ill, and had not complained; all the Workhouse children were then isolated and kept from attending School, and in a few days three other cases developed there. In all 17 cases occurred between 1st March and 24th April, five houses only (excluding the Workhouse) being affected. The infection in this epidemic was clearly from case to case; no transmission of infection by milk, etc., could have been suggested, because the houses first affected were supplied by different dairies. In future, according to your instructions, I shall give a written order for the destruction of infected material which cannot be disinfected.”

Diss.—“Only one case (imported).”

Hunstanton.—“There were nine cases in six houses. The source of infection could not be traced in five cases occupying three houses. In two cases the infection was traced to outside the district. In two cases the infection was probably brought into the place by children who had recently had Scarlet Fever, but were supposed to be free from infection. Seven cases were treated in the Isolation Hospital. One case was treated in a private

Isolation Hospital. One case was removed home in a private motor car. Steps were taken to prevent further spread from the two supposed 'carriers,' and no other cases occurred."

Sheringham.—"Only four cases."

Swaffham.—"Forty-seven cases, one death. Most of the cases were very mild, and in some instances in the early stages of the disease were difficult to recognise."

North Walsham.—"No cases notified."

Walsoken.—"Eleven cases, generally of a mild type."

Wells-next-the-Sea.—"Only one case."

Thetford M.B..—"Five cases. It is somewhat remarkable that four of them were adults."

King's Lynn M.B..—"During the first half of the year only a very few cases were notified, but in September (after the holidays) the Education Authority notified a number of cases which were then desquamating. The fever was of a very mild character, and so much so, that the parents had taken very little notice of it, and no doctor had been called in. Very probably the prompt action taken by the School Authorities prevented an outbreak, for since that time the number of notifications has rapidly decreased, until at the time of writing this there are hardly any cases."

Rural Districts.

Aylsham.—"16 cases were notified. 10 dwellings only were affected, and it is satisfactory to record that, although the district was attacked by the infection of Scarlet Fever at ten different points, the infection was limited in every instance to the house into which it was introduced, and this has been effected without the help afforded by the Isolation Hospital.

"No deaths were registered as due to Scarlet Fever."

Blofield.—"Although Scarlet Fever has been prevalent, and as many as 34 cases notified, the disease has not been of a severe type, and no fatal cases have occurred.

"In Thorpe St. Andrew Scarlet Fever had broken out at the end of the previous year, and during January of 1909 13 cases were notified. The School was closed from January 21st to March 1st, but cases continued to crop up at intervals until the middle of the Summer. The type of disease being so exceedingly mild, it is likely that infection was being spread by unrecognised cases.

"The small outbreak on the North side of Blofield, numbering only four cases, was also a legacy from the previous year.

"In Woodbastwick four cases were notified in the Autumn. Every possible precaution, including the closure of the School, was taken to prevent the spread of the disease, and with good results."

Depwade.—"110 cases distributed as follows:—Tibenham 2, Fritton 5, Stratton 7, Tivetshall 3, Pulham St. Mary 2, Hempnall 25, Morningthorpe 7, Moulton 1, Bunwell 17, Pulham Market 7, Forncett St. Peter 8, Ashwellthorpe 1, Tasburgh 1, Shelfanger 17, Carleton Rode 6, Redenhall 1."

Docking.—"36 cases; 28 in Heacham and Dersingham. I could not trace the connection between groups of cases owing to several scattered cases at Heacham at the end of 1908. I inspected all the School children when the School reopened in January, 1909, but no infectious case was found. In February three cases were reported in one house at Dersingham. I visited and found they were in different stages of the disease. From the history I conjectured that a fourth child, then well, was the starting-point as regards this house, but there were no other known cases in the village. All children still infected were isolated, and all rooms, clothes, etc., in the house that might be infected were thoroughly disinfected. In November

the School Attendance Officer reported a case of Scarlet Fever at Burnham Thorpe. The Sanitary Inspector saw the doctor who was attending, who said it was not Scarlet Fever. On December 15th the Schoolmaster at Heacham reported a case of Measles. I visited the house, found no doctor attending, and was allowed to see the child. From appearance I suspected Scarlet Fever. The child was isolated and other children kept from School. On December 24th I visited again and found the child was 'peeling,' confirming my suspicion. On December 26th a second child was taken ill with Scarlet Fever. There were no means of properly isolating these cases in their own house, there being eight children and the two parents, and only two bedrooms. I attended your Council meeting on the 29th, when you appointed a local Committee to act with myself and the Sanitary Inspector to take all necessary steps to prevent the infection spreading. The following steps were taken:—An empty house next door was hired and roughly furnished, five children and the father were moved into it and their clothes disinfected, and the District Medical Officer took charge of the cases. Three cases occurred in another family which were pretty clearly traced to the first of these two cases. They were isolated at home and there have been no other cases."

Downham.—" 28 cases. In no instance anything like an epidemic. I think this was due to the prompt measures taken to deal with the first intimation of an outbreak,

"The first case at Stoke Ferry was clearly imported by a child coming to stay in the village in August. Four members of the family contracted the disease.

"The three cases at West Dereham, in March, were clearly imported.

"Another case at Wormegay was first probably contracted outside the district."

Erpingham.—" 60 cases were notified, as compared to 53 cases in 1908 and 124 in 1907. The distribution of the disease was as follows:—Runtun 42, Overstrand 4, Thorpe Market 3, Trimmingham 3, Metton 3, Northrepps 2, Southrepps 1, Antingham 1, Roughton 1. It will be seen that had it not been for the epidemic at Runtun the number of notifications would have been small, namely, 18. The outbreak, which was of a very mild character, appeared first in July amongst a few children attending School, and lasted through August into September. In two families in Wyndham Park children were found in the desquamating stage, having had no medical attendance. The fathers were prosecuted and convicted of concealing an infectious disease. There was no death from Scarlet Fever."

East and West Flegg.—No cases in 1909.

Forehoe.—6 cases.

Henstead.—27 cases occurred in nine parishes—7 in Swardeston (infection spread at School), 5 in East Carleton, 5 in Cringleford, 3 in Wrenningham, 2 in Trowse, 2 in Ketteringham, and 1 each in Bixley, Mulbarton, and Stoke.

West Lynn.—" 3 cases at intervals of about one month, all occurring in the same family. The house is situate on the East side of the river and is practically in King's Lynn. The continuance of the disease was probably owing to the impossibility of isolation and inadequate disinfection of clothing, bedding, etc.; we having no modern methods."

Loddon and Clavering.—"Three prosecutions have been made for exposing persons suffering from infectious disease, and had it not been for these cases of exposure we should have been practically clear of Scarlatina for the whole year."

Freebridge Lynn.—Nil.

Marshland.—" 17 cases were notified, compared with 33 in 1908. The majority of the cases occurred in West Walton during the prevalence of an outbreak in Wisbech. By promptly closing West Walton School and disinfecting it, the disease was confined to three families. There were no fatal cases."

Mitford and Launditch.—"The 27 cases of Scarlet Fever occurred in ten parishes, and in one only, Tittleshall, was there an epidemic. In this parish the spread of infection was due to carelessness and refusal to carry out our instructions."

St. Faith's.—18 cases ; no deaths.

Smallburgh.—22 cases of Scarlet Fever—1 in Smallburgh, 3 in Stalham, and 18 in Ludham sub-district.

Swaffham.—29 cases. “ There was an outbreak at Beechamwell in the months of May and June, when there were 9 cases. At Necton, and in the neighbouring villages of Sporle and North Pickenham, there were 16 cases. The fact that Scarlet Fever was prevalent in these same villages last year suggests the probability of a recrudescence of the disease. There were 4 cases at Little Cressingham, which were due undoubtedly to contact with a family who failed to notify the occurrence of illness, proved to have been Scarlet Fever, in several members, probably through ignorance of the nature of the disease. The Council, after consideration, decided not to prosecute on this occasion.”

Thetford.—4 cases.

Walsingham.—“ Scarlet Fever occurred in seven parishes, the majority of the cases being in Melton Constable, where during the year there have been 18 cases of a very mild type, which in consequence do not come under observation at the onset of the disease, with the result that the epidemic has been prolonged by cases that probably have never been recognised. The School has several times been inspected, and suspicious cases investigated.”

Wayland.—30 cases. “ There was an epidemic at Tottington, commencing in the middle of April. I visited the locality, and, with the assistance of the Inspector of Nuisances, endeavoured to trace the original infecting course, but unsuccessfully. I recommended the closure of the School on the 19th April. Fresh cases, however, continued to be notified till the end of May, there being 17 in all ; fortunately none terminated fatally.”

ERYSIPELAS.

92 cases were notified in the 20 Rural Districts, with 2 deaths, giving a case mortality of 2·17 and a zymotic death rate of ·007. In the 12 Urban Districts 28 cases were notified, without a death. The total for the Administrative County of Norfolk was therefore 120 cases, with 2 deaths, giving a case mortality of 1·66 and a zymotic death rate of ·006.

PUERPERAL FEVER.

Only two cases of this disease were notified in 1909 in the Administrative County of Norfolk, one in the Mitford and Launditch Rural District and the other in the Swaffham Rural District—the former case died. The figures are too small for statistical notes.

TUBERCULOSIS.

The magnitude of this evil is yearly receiving more attention, more especially since Dr. Hermann Biggs, of New York, in 1903 calculated the annual expense of Tuberculosis to the United States at £66,000,000. He estimated (allowing £300 for each life) the total value of the lives lost annually in New York at £3,000,000. Beyond this he calculated a further loss of £1,600,000, since the patients cannot work for at least eight or nine months before death, and require special food, nursing, medicines, &c. Against this the City of New York was spending £100,000 a-year in the care of tuberculous patients, and Dr. Biggs demonstrated that it would be economical to double this expenditure.

In England and Wales, it has been estimated that the relief of pauperism due to Consumption amounts to over £1,500,000 a-year. Friendly Societies and Charitable Institutions spend as much more, so that the direct loss to the country is at least three millions a-year ; indirectly the loss must be twice as great. Since the prevention of Consumption would result not only in the saving of this huge sum—but would preserve to the country the flower of its manhood (for it must be remembered that Phthisis strikes down men in their prime)—the expenditure of a few thousands in this direction is amply justified.

Applying the above calculation to Norfolk, allowing £300 for each life, it would appear that—since 324 deaths in Norfolk were attributed during 1909 to tuberculous diseases—the expense of the disease to the County amounted to the equivalent of nearly £100,000 during last year. The amount hitherto spent on measures towards the prevention of Tuberculosis in Norfolk is infinitesimal, and ample scope remains for what would prove an economical multiplication of this very small amount.

In my Report for the year 1907 I alluded to the relationship between the milk of tubercular bovines and Tuberculosis—even the pulmonary form—by way of the intestinal lymphatics, and stated that this view did not by any means put out of court the danger of infection through the inhalation of dried expectoration or other infective material, or by way of spray from the mouths of consumptives, whilst coughing or speaking loudly.

Flügge,¹ of the Breslau Institute of Hygiene, believes that the last-named method of infection is the most important. Under his direction a series of researches were carried out, as a result of which it is asserted that infection by way of the alimentary tract is possible only when the quantity of bacilli ingested is over 300,000 times the quantity sufficient to cause an infection when inhaled. These researches partly explain why fewer people are affected by tuberculous milk than would be expected in view of the enormous amount of Tuberculosis among milch cows. In tuberculous *herd* milk (not the milk of a single cow, which, if tuberculous, would be very dangerous), when drunk at the rate of a litre a day, the bacilli are not likely to be so plentiful as to be very dangerous, except to susceptible infants through repeated small doses of bacilli. Professor Koch taught that the human type of the bacillus is the chief source of danger to man. What this means obviously is that while milk inspection must in no wise be neglected on this account, yet greater and more earnest attention must be paid to the human sources of infection.

Dr. Franz Hamburger is of opinion² that at the age of puberty over 90 per cent. of children in Vienna have been somehow or other exposed to tubercular infection, and give a positive reaction when tested with tuberculin. It would be interesting to know whether a similar percentage would be obtained for children in London and for children in rural areas.

The clinical signs of the disease do not develop in most instances, because the bacilli may enter the system and lie latent in a gland until active growth is determined by some accident; or in other cases the defensive tissues of the child may altogether destroy the invading bacilli. Other authorities think that Tuberculosis in adults is often a recurrence of the disease which was originally acquired during childhood. No efforts should therefore be spared to protect the children of the nation from this scourge. These efforts include housing reform, temperance reform, milk production reform, and relief reform, in addition to educative measures adopted at sanatoria and other institutions, the distribution of antituberculous literature, and supervision over consumptives in their own homes.

Efforts are being put forth in these various directions and are already bearing fruit in the steady reduction of the Phthisis death rate in this country.

During 1909, 244 deaths were due to Phthisis in the Administrative County of Norfolk, and 80 further deaths to other tuberculous diseases, giving crude death rates of .77 and .25 respectively. These rates are considerably below the average for England and Wales. Now that notification of pauper phthisis has been made compulsory we may reasonably hope for a further reduction when aided by the improved housing accommodation which must surely, if slowly, follow on the Housing Act, 1909. Among the constituent districts of the County, Thetford Urban and Thetford Rural showed the highest Phthisis death rates—1.73 and 1.20 respectively; Cromer Urban District had the lowest Phthisis death rate in the County, viz., 0.47, that of Smallburgh being .51, the lowest among the Rural Districts.

In Norfolk two well-managed Sanatoria are to be found near Holt—one for adult, the well-known Kelling Sanatorium—the other a Children's Sanatorium, also at Kelling. Neither is reserved for Norfolk needs; indeed, the majority of the patients come from elsewhere, chiefly, I believe, from Lincoln and London.

In December, 1908, the Local Government Board issued a circular on the Public Health (Tuberculosis) Regulations, 1908, stating that in view of the desirability of affording facilities for the extension of administrative action for the prevention of Tuberculosis they had issued an Order in pursuance of Section 130 of the Public Health Act, 1875, as amended and extended by the P.H.A., 1896, to provide for the notification to the Medical Officers of Health of Sanitary Authorities of cases of Pulmonary Tuberculosis occurring amongst the inmates of Poor Law Institutions, or amongst persons under the care of District Medical Officers, and for the taking of certain measures in such cases. The Order also provided for the notification by Superintending Officers of Poor Law Institutions and by Relieving Officers

1 Zeitschrift für Hygiene.

2 Muench. Med. Woch. (Dec. 29, 1908).

of the actual or intended place of destination and address at that place of any person leaving the institution or address who had already been notified. The Order came into force on January 1st, 1909.

Article IX. of the Regulations protects notified individuals from penalties, or from any restriction, prohibition, or disability affecting himself, or his employment, occupation, means of livelihood, or residence, on the ground of his suffering from Pulmonary Tuberculosis; but subject to this empowers District Councils, on the advice of their Medical Officer of Health, in the case of a poor person in relation to whom a notification in pursuance of the Regulations has been posted to the Medical Officer of Health, to:—

- (1) Take all such measures, or do all such things as are authorised, in any case of infectious disease, or of dangerous infectious disease by any enactment relating to public health, and as have reference to the destruction and disinfection of infected articles, or the cleansing or disinfecting of premises.
- (2) Take all such measures or do all such things as are appropriate and necessary for the safe disposal or destruction of infectious material, produced and discharged as a result of Pulmonary Tuberculosis; and otherwise for the prevention of the spread of infection from any such material.
- (3) Afford or supply all such assistance, facilities, or articles as, within such reasonable limits as the circumstances of the case require and allow, will obviate, or remove, or diminish the risk of infection arising from the conditions affecting the use or occupation of any room, when used or occupied by the poor person as a sleeping apartment; and
- (4) Furnish for the use of the poor person on loan or otherwise, any appliance, apparatus, or utensil which will be of assistance for the purpose of any precaution against the spread of infection.

District Councils, on the advice of their Medical Officer of Health, may provide and publish or distribute in the form of placards, handbills, or leaflets, suitable summaries of information and instruction respecting Pulmonary Tuberculosis, and the precautions to be taken against the spread of infection from that disease. The National Association for the Prevention of Consumption has prepared and could supply all suitable pamphlets, etc.

In March, 1909, the Local Government Board issued a Memorandum by their Medical Officer setting out the appropriate action that can be taken under the powers conferred on Sanitary Authorities by the Regulations, and intimated their desire that in each Annual Report the Medical Officer of Health should include a statement of the action taken by the Local Authority under the Regulations.

After defining the scope of the Order and of the Memorandum, Dr. Newsholme sketches in masterly style the characteristics of Tuberculosis, which is an infectious disease, the indispensable element in the causation of which is the tubercle bacillus, recognisable by bacteriological methods—which fact magnifies the importance of the bacteriological diagnosis of tuberculosis, and indicates how facilities should be provided by Sanitary Authorities for such examinations.

The following extracts from the Memorandum speak for themselves:—

“Tuberculosis is not only a preventable disease, but it can also be arrested in its earlier stages; and, indeed, the vast majority of those attacked by it recover.”

A decline in the total prevalence of Tuberculosis has been taking place for some years. “This decline has occurred under the influence of improved sanitation and higher social welfare. . . . The vastly increased treatment of advanced cases of Pulmonary Tuberculosis in infirmaries and other institutions has been most valuable in securing segregation of patients from their families as well as in securing humane treatment for the patients themselves. Diminution of overcrowding . . . and other measures of sanitation and social improvement have acted either by increasing resistance to, or by diminishing the amount of, infection in the community, or usually by the combined influence of both these factors.”

Dr. Newsholme illustrates how the infectiousness of Pulmonary Tuberculosis differs in several respects from most of the acute infectious diseases, the mode of infection in most cases being through the sputa from the lungs, and, therefore, easily controlled by the patient

if he is intelligent and scrupulously careful. However, "against the limited channels of transmission of Pulmonary Tuberculosis must be set its protracted duration." The facts "not only indicate that an exaggerated fear of infection in Pulmonary Tuberculosis is unnecessary; but they also emphasise the desirability of inculcating more exact knowledge as to the disease."

Dr. Newsholme then deals with educational measures against Tuberculosis, which is described as a *disease of misery*, but much more a *disease of ignorance*. Among the most valuable results of the measures for its treatment and relief must be the hygienic training of the patient. The general community must be instructed as well as those already tuberculous, and those exposed to the infection of Tuberculosis. Touching on the importance of teaching hygiene in School life, Dr. Newsholme notes the active and valuable propagandism outside School life, which is rapidly spreading knowledge among the people at large as to the essentials of the prevention of Tuberculosis, "and is increasingly bringing the pressure of public opinion to bear against indiscriminate expectoration, and against overcrowding and other evils of housing and occupation. Much more could be done in these directions. . . . It is more urgently necessary that special instructions should be given to those more directly exposed to tuberculous infection, and the value of notification is especially evident in this direction." Precise "knowledge should be possessed, not only by nurses and relatives attending patients, but by those engaged in occupations in which Tuberculosis is most rife. . . . Instruction of the individual patient is essential for the prevention of Tuberculosis. Pulmonary Tuberculosis being a disease of protracted duration, the institutional or domestic isolation of patients during the whole course of the disease is impracticable." Hence the importance of specific instructions preferably personally explained as well as promulgated by pamphlets. Administrative control "is successful just so far as it secures enlightened precautions on the part of the consumptive patient. Measures to secure early diagnosis, whether by bacteriological or other means, stand equally high as means of prevention." Dr. Newsholme's Memorandum deals with early diagnosis, the Medical Practitioners' position in relation to preventive measures, the administrative control of Tuberculosis, procedure in official investigations, action against infection, home training and supervision, dispensary, sanatorium, and (for advanced cases) institutional treatment.

"The best work will be secured if there is active co-operation between voluntary and official workers and agencies; and this remark applies particularly in securing sanatorium treatment for patients." . . . "It may confidently be expected that administrative measures will enable sanitary authorities gradually to bring Tuberculosis under their control, and to secure that it shall become as much a disease of the past in this country as Leprosy has become."

The "National Association for the Prevention of Consumption and other forms of Tuberculosis" has this year (July, 1910) made a special appeal for funds for the purpose of educating the nation by mean of—

- (1) Travelling Tuberculosis Exhibitions.
- (2) Caravans with Lantern Slides.
- (3) Popular Lectures.
- (4) An Information Bureau for the Press and Public.
- (5) The Distribution of Literature.

It may indeed be truly said, as by the Appeal Committee, that "Medical Science has placed at our disposal to-day sufficient data as to the causes, treatment, and prevention of consumption to enable us, by concerted measures, to stamp out the disease in a generation. . . . Typhus Fever and Small-pox have been practically abolished by the careful and scientific application of medical knowledge. It is possible with our present knowledge to do the same thing in regard to consumption."

Voluntary notification has been invited at King's Lynn at the usual rate of payment, but that Doctors are not merely "out for fees" is evidenced at King's Lynn as elsewhere, for only one voluntary notification has been made. Voluntary notification has been adopted in many towns, but has not secured many notifications, and certainly fails to achieve the object of control over all known cases, which can only be achieved by *compulsory* notification. Still a great deal has been achieved by the Local Government Board having made the notification of pauper cases compulsory, for these are the cases which most need administrative control, which was not met by voluntary notification. It may seem strange that in a large town

where, on my initiative, Pulmonary Tuberculosis was voluntarily notifiable at the usual rate of payment, since 1902, the Poor Law Medical Officer did not notify a single case during the subsequent six years of my administration. He stood to lose nothing, but only to gain small fees, but compulsion not being in force, he probably never troubled about the matter or gave it a thought. It is these pauper cases which most need careful supervision. Their natural ignorance, poor housing, insufficient bedroom accommodation (and small rooms at the best), their habits as to expectoration, their social habits—at home, in the public-house, in the streets, or in common lodging-houses, all need supervision and generally correcting, and to them instruction through Health Visitors under the supervision of the Medical Officer of Health is of supreme importance. Temporary residence in a sanatorium provides them with a practical demonstration of how they should live (as far as possible) when they return home.

The following extracts from the District Medical Officers of Health Reports indicate what action was taken under the powers conferred on Sanitary Authorities by the Public Health (Tuberculosis) Regulations, 1908. Some Reports make no reference to the matter, but this default will no doubt be remedied in future.

Urban Districts.

Cromer.—Two deaths from Pulmonary Tuberculosis. No reference to P.H. (Tuberculosis) Regulations, 1908.

East Dereham.—Six deaths from Pulmonary Tuberculosis; 7 deaths from other tuberculous diseases. No reference to Regulations.

Downham Market.—“Only one death was registered from Pulmonary Phthisis, and one from other tuberculous diseases. Two cases among paupers were notified, both in the Workhouse Infirmary, one of these being the above registered death. There is no system of voluntary notification.”

Diss.—Four deaths from Pulmonary Tuberculosis; 2 deaths from other tuberculous diseases. (No remarks.)

New Hunstanton.—“There were three deaths from Phthisis. Disinfectants were supplied in all cases that they were required, and the infected rooms, &c., disinfected after death, removal, or recovery.”

Sheringham.—No deaths recorded. No remarks.

Swaffham.—Two deaths. No remarks.

North Walsham.—“There have been two cases of Pulmonary Tuberculosis notified under the Local Government Board Order for the notification of cases coming under the notice of the Poor-Law Medical Officer. There is no other system of notification of Phthisis in the District. The notifications under this Order give very important information as to the prevalence of the disease in the locality. There have been seven deaths in the district from Pulmonary Consumption. The action taken in the notified cases is the visiting of the house and the giving of instructions as to the infectious nature of the disease, need of fresh air, separate accommodation, etc. No deaths have occurred among the notified cases. No action has been taken by the Sanitary Authority in those cases where death has occurred from Phthisis (unnotified). There is no hospital accommodation for Pulmonary Tuberculosis in the District.”

Walsoken.—“I now have to note the prevalence of Phthisis, but fortunately this year no death has been caused by this affection.”

Wells-on-Sea.—Three deaths from Pulmonary Tuberculosis, all over 60 years of age. “It would, I think, be well if Pulmonary Tuberculosis was included amongst the notifiable diseases. Its infectiousness is indisputable, and its transmission from patient to patient, frequently spread over several years, is often quite obvious and easy to trace.”

Thetford M.B.—“Notification of Tuberculosis is confined to pauper cases. These are visited and instructions given, disinfectants and spitting bottles are supplied, and disinfection of the rooms carried out. There is no accommodation for cases of Pulmonary Tuberculosis in the town except the Workhouse Infirmary. Eight deaths from Phthisis occurred in 1909.”

King's Lynn M.B.—“During the present year there have been sixteen deaths from Tuberculosis of the lungs and thirteen deaths from other forms of Tuberculosis. The average death rate (*sic*) of Tuberculosis of the Lung for the eight years previous has been slightly over

20 per annum. Compulsory notification came into force on the first day of the year of all cases coming under the Poor Law. Nine cases in connection with this Order were notified during 1909, five of which have since died. Early in the year the Sanitary Authority passed a resolution inviting voluntary notification, at the usual rate of payment, of any cases which should come under the notice of medical practitioners; especially with regard to cases where it was thought that beneficial results would be obtained by calling the attention of the Sanitary department to them. One such case has been notified. It was also resolved that a free microscopical examination should be made of the sputa of suspected cases, when required, on application being made to the Sanitary department. Large printed cards were also obtained, on which were printed full instructions for preventing the disease from spreading and other information as to its real character. These were, and continue to be, distributed to all notified cases. By this means it is hoped that a more general knowledge of the subject may be disseminated. A great many people have not yet realised that Consumption, which is the common name of this disease, is catching, particularly by means of the sputum, and still believe that heredity is the main cause; but it is to be hoped that when its true nature is more fully realised there will be a marked diminution in the death rate from Tuberculosis. In some towns compulsory notification is in force, also treatment of the worst cases in sanatoria, but at present this does not appear to be feasible in the borough; possibly it may be carried out later."

Rural Districts.

Aylsham.—"Eleven deaths were registered as due to Pulmonary Tuberculosis, and three more were classified under 'other tubercular diseases.' This gives a Phthisis death-rate of 0.65 and a Tuberculosis death-rate of 0.83. These rates are, comparatively speaking, low. Since the Public Health (Tuberculosis) Regulations, 1908, came into force on January 1st, 1909, I have received notification of five "poor persons" suffering from Pulmonary Tuberculosis. Of these one was an inmate of the Workhouse and has since died. One other has also died, leaving three under observation at the present time. The following measures have been taken in each instance with the view of limiting the spread of infection:—The patient has been given a printed Card of Instructions and Advice; a supply of Jeyes' Fluid; an aluminium spitting cup with paper cases; and where needed a Crossley spitting flask. Where the patient has died the room occupied by the patient has been disinfected. It will be noticed that only a quite insignificant number of cases have been dealt with, and those for the most part have been in an advanced stage. It is hardly to be expected that any practical result will be seen in the control of Phthisis until the scope of the Regulations is extended."

Blofield.—"Deaths from Pulmonary Phthisis numbered nine (excluding Asylum), which gives a Phthisis death-rate of .34 per 1000 population. There were also registered two deaths from other tubercular diseases, bringing the total to eleven and showing a Tubercular death-rate of 1.02. Four cases of 'poor persons' suffering from Pulmonary Tuberculosis have been notified to me in accordance with the provisions of the Public Health (Tuberculosis) Regulations, 1908. In each case I have visited the patient and given such advice as appeared necessary. A spitting cup with a supply of paper linings, or a Crossley pocket spitting flask has been provided according to the requirements of the patient. One case has terminated in death, and the room occupied by the patient has been thoroughly disinfected by the Inspector. It will be gathered that while the recommendations contained in the memorandum issued by the Medical Officer of the Local Government Board have been carried out as far as possible, the number of cases brought within the scope of the Regulations is too small to produce any appreciable effect on the spread of Tuberculosis in the District."

Depwade.—"Deaths due to Phthisis and other tuberculous diseases are less numerous than last year and well below the average of your district. During the present year I have received eight notifications of Phthisis; four of the cases were under treatment in your Workhouse, the other cases were in the Parishes of Alburgh, Brockdish, Harleston, and Roydon." [No reference to the Regulations.]

Docking.—"The following steps have been taken by the Council:—On receiving notification of a case it is visited by myself or the Sanitary Inspector. A separate sleeping apartment is, if possible, arranged. All necessary precautions explained, a spittoon (sanitary)

and disinfectants supplied, and room disinfected after death or removal. Spittoons and disinfectants are supplied to non-notifiable cases on the request of their medical attendant if, in his opinion, they are too poor to provide them for themselves. On request, rooms occupied by consumptives other than those notified have been disinfected after death. Seven cases have been notified during the past year, and four have died."

Downham.—"Only one notification of Tuberculosis has been received. I approached the local practitioners as to the advisability of adopting a voluntary system of notification of all cases of Tuberculosis, but this did not meet with their approval." [No reference to Regulations.]

Erpingham.—"Nineteen deaths were caused by Tuberculous diseases, 13 of which were from Phthisis, as compared with 17 in 1908." [No reference to Regulations.]

East and West Flegg.—Six deaths. [No remarks or reference to Regulations.]

Forehoe.—"Three new cases of Phthisis were notified; two in the Wymondham and one in the Costessey district. Of deaths from various causes, 13 are attributed to Phthisis and other Tuberculous diseases. The necessity for fresh air and sunshine has been explained to these patients, and isolation, especially in sleeping, enjoined. There is now provision made for isolating such cases in the Wicklewood Workhouse."

Henstead.—[No remarks or reference to Regulations.]

Loddon and Clavering.—[No remarks or reference to Regulations.]

West Lynn.—"Human Tuberculosis not notifiable. No hospital accommodation available." [No reference to Regulations.]

Freebridge Lynn.—"The notifications received under the recent Act number four; each case was promptly visited and recommendations made for disinfection. The number of deaths from this disease was 11 (including three of the above notified cases), seven occurred in the Gayton district, and two in each of the registration districts of Castle Rising and Hillington."

Marshland.—"Three cases were notified during the year. Nine deaths occurred, compared with 11 in 1908." [No reference to Regulations.]

Mitford and Launditch.—"Phthisis and other tubercular affections again caused a heavy mortality, 26 persons dying from these affections. We are having houses where deaths occur from Tuberculosis disinfected, and I think fewer cases are originating in the District."

St. Faith's.—[No reference to Regulations.]

Smallburgh.—"Last year was the first year in which Pulmonary Tuberculosis had been included amongst the notifiable diseases, and 10 cases were notified, six in the Smallburgh sub-district, three in the North Walsham, and one in the Ludham. Although the Sanitary Authorities had asked for the voluntary notification of cases other than pauper, only two cases had been notified during the year. Medical Practitioners were asked to notify all cases, so that disinfection might be offered and carried out where householders were not in a position to undertake this necessary duty themselves."

Swaffham R.—There were only four deaths certified as due to Tuberculosis. [No reference to Regulations.]

Thetford R.—Twelve deaths were due to Phthisis. Disinfection of room offered after death. Action taken as reported for Thetford Urban District.

Walsingham.—"Only six among pauper cases have been notified during the year, all occurring in late middle life. In these, special instructions have been given as regards disinfection of sputum and the use of separate sleeping rooms. The death rate from tuberculous diseases, 0·8, has remained almost the same for the last five years."

Wayland.—"Under the Public Health (Tuberculosis) Regulations, 1908, which came into force on January 1st, 1909, five cases were notified. Following the suggestions of the Medical Officer to the Local Government Board in his Memorandum on the subject, those preventive measures which were possible have been carried out in conjunction with the District Medical Officers in attendance on the patient."

NON-NOTIFIABLE INFECTIOUS DISEASES.

WHOOPIING COUGH

Was not so prevalent or fatal as in 1908. There were only 12 deaths in the 12 Urban Districts, and 10 of these were in King's Lynn. There were 25 deaths in the 20 Rural Districts, no deaths being recorded from this disease in Aylsham, Flegg, Forehoe, Henstead, Loddon and Clavering, West Lynn, Smallburgh, and Swaffham Rural. 5 deaths were recorded in Wayland, 4 in Walsingham, 3 each in Marshland and Erpingham, 2 each in Depwade and Downham (Rural), while single deaths were recorded in 6 Rural and 2 Urban Districts.

As School Medical Officer, I have distributed certain precautionary pamphlets in connection with these diseases, which have been of considerable use in educating the villagers to attach more importance to these two very infectious diseases. Whooping Cough in a young infant under two years of age is an exceedingly fatal disease, and in my remarks on Infantile Mortality it is recorded that 14 out of the 37 deaths from Whooping Cough during 1909 occurred among infants under one year of age. 35 out of the 37 deaths were of children under five years. I found that these educative pamphlets, which I prepared when I was Medical Officer of Health of a Borough, helped very considerably to reduce the incidence and fatality of Measles and Whooping Cough; and that similar instruction is needed in Norfolk is illustrated by the Report of the M.O.H. for Wayland R.D., who says—"There is by no means sufficient importance attached to them (Measles and Whooping Cough) by parents, who do not appear to realise that they are very infectious and fatal to young children. They are so lightly regarded that, leaving aside the isolation of individual cases, which is frequently impossible in a small cottage, often no attempt is made to prevent the children from an infected house from mixing with other children and so distributing the infection." The Whooping Cough zymotic death rate for the County in 1909 was 0·11, as compared with 0·39 in 1908 and 0·18 in 1907.

MEASLES.

[Under the Infectious Diseases (Notification) Extension Act of 1899 this disease is notifiable in Sheringham Urban and East and West Flegg Rural Districts.]

Extended experience in certain large towns as to the value of ordinary notification of Measles has led to its abandonment as impracticable for effective action to be taken in connection therewith—and therefore not worth the cost. But from several years' experience I can speak with confidence as to the value of School notification of Measles, if first cases are promptly notified, and immediate inquiry made, and appropriate action taken. The Norfolk Education Committee on my advice have approved of a Measles Register which is proving of great value, and enables me as School Medical Officer to advise as to the exclusion of particular scholars, class or department closure, for a brief interval of five or six days, or closure of the School entirely. Each of these administrative measures is useful and is put in force according to the exigencies of each particular outbreak.

Where a District M.O.H. deems closure of a School necessary, he can either obtain an Order from his Sanitary Authority or consult with the School M.O., whose approval is necessary unless Art. 57 of the Code is strictly complied with. 124 Schools were closed in the Administrative County during 1909 on account of Measles, which was extensively prevalent in the following Rural Districts: Aylsham, Blofield, Depwade, Docking, Loddon and Clavering, Mitford and Launditch, St. Faith's, and Wayland. In large towns Measles epidemics occur with great regularity every two or three years, particularly if no administrative measures are taken in respect thereof—the alternate years being characterised by freedom from the disease. The explanation is exhaustion of susceptible children until a new lot of infants come into existence.

It is interesting to note how Measles gradually spreads from village to village and from district to district. On the whole Measles during 1909 was of a mild type, and only 16 deaths occurred in the whole Administrative County of Norfolk, 15 deaths being of children under five years of age. The Measles zymotic death-rate for the Administrative County in 1909 was 0·05, as compared with 0·24 in 1908, and 0·05 in 1907.

The following references to Measles occur among the District Reports:—

East Dereham U.D.—Dr. Belding writes—"Two deaths occurred from Measles at the fatal age, *i.e.*, under five years. It is difficult to make parents grasp that for small children measles is a serious complaint."

Sheringham U.D.—64 cases of Measles having occurred in a small population in spite of notification being in force illustrates the uselessness of ordinary notification, attributable to the fact, as is indeed recognised by Drs. Sumpter and Linnell, that in Measles the infection is conveyable two or three days before the rash appears; but they defend notification as follows:—"Nevertheless, we regard the notification of Measles as a useful measure, in that it emphasises to the parent the importance of warmth and nursing, and thus reduces the fatality of the disease from lung complications. There has been no death during the year in Sheringham due to Measles or its complications."

Aylsham R.D.—Epidemics occurred in Swanton Abbot, Oulton, Scottow, Cawston, and Coltishall.

Blofield R.D.—This disease was prevalent in many Parishes during the year and necessitated the closure of Schools at Blofield, Hemblington, Little Plumstead, and Upton. Three deaths were registered as due to Measles—all of children under five years.

Depwade R.D.—"A wave of Measles has swept through a large proportion of your District. It has been necessary to close no fewer than twelve Schools on this account, and, considering the high mortality of this disease, it is remarkable that but one case out of some hundreds has ended fatally."

Docking R.D.—Very prevalent.

East and West Flegg R.D.—Caister Schools were closed owing to the outbreak of Measles: Infant School on 19th September, 1909, the School on 27th September, 1909, until 15th November, 1909.

Marshland R.D.—Measles was responsible for one death.

Mitford and Launditch R.D.—"Measles has been epidemic during the year and there have been two deaths, both at the dangerous age, *viz.*, under five years. I do not think parents grasp sufficiently the danger of Measles to small children."

St. Faith's R.D.—"Measles was very prevalent in the first half of the year in many parts of the District, and in several Parishes the epidemic became so wide-spread that, acting on my advice, the Council closed several of the Schools on this account."

Wayland R.D.—"There was a very extensive epidemic of Measles throughout the District, commencing in July at New Buckenham and spreading from village to village. The disease did not appear to be of a severe type and there was only one fatal case."

VACCINATION.

Vaccine therapy in relation to many diseases is one of the latest developments of therapeutic research, but the prophylactic use of Cow Pox lymph as a protective measure against Small Pox is now an old story. To any medical man (especially a Medical Officer of Health) who has had to administratively deal with an outbreak of Small Pox, it must have often been a matter for wonder that there should be such strong opposition in some quarters to a slight operation inducing a comparatively slight local reaction, which yet has such a tremendously protective effect against one of the most painful, disfiguring, fatal (and at times loathsome) of diseases. Happily, every well-vaccinated person is not only himself protected but is a source of indirect protection to his unvaccinated neighbours. As long as the vaccinated members of a community are largely in the majority, Small Pox will be capable of being easily stamped out, provided that proper isolation of infected persons, destruction or adequate disinfection of infected articles, and immediate vaccination or re-vaccination of contacts can be promptly effected. Indeed, in a well-vaccinated and re-vaccinated country like Germany they can manage to dispense with special hospitals for Small Pox—but if vaccination and re-vaccination are in abeyance, a Small Pox hospital in readiness is essential towards limiting the spread of the disease, together with a cordon of recently well-vaccinated persons in the Nurses and Doctors attending patients, and in the persons of Inspectors, Disinfectors, etc., who have anything to do with them.

Unfortunately the issue of Form Q, in place of having to swear to a conscientious objection before a Magistrate, has put it into the power of lazy, careless, ignorant, and indifferent parents to get off the trouble of having a child vaccinated, and a large increase of exemptions is noticeable, as illustrated by the following quotations from District Reports, which deserve the closest consideration. Dr. Back reports for the Aylsham and Blofield Rural Districts, as follows :—

Aylsham.—" Re-vaccination has been a dead letter for many years ; only occasionally is it performed to comply with the regulations of the public services. Primary vaccination is for the present better carried out in rural districts than in towns, but in the last two years there has been a marked increase in the number of children for whom exemption has been claimed under the conscience clause, and the district is becoming year by year more open to attack should an epidemic unfortunately break out in Norwich, a notoriously unvaccinated City. The labouring population in country districts are, for the most part, entirely ignorant of the benefits of vaccination, and whether an infant is vaccinated or not is determined by the parents weighing the public inconvenience of a baby with a vaccinated arm against the trouble of obtaining an exemption order."

Blofield.—" Number of children exempted under Conscience Clause in the last eight years :—1902, 9 ; 1903, 4 ; 1904, 6 ; 1905, 6 ; 1906, 17 ; 1907, 13 ; 1908, 39 (Form Q) ; 1909, 43.

" The year 1909 therefore constitutes a record for the number of unvaccinated children in the District, and it may be safely predicted that this record will be beaten in each succeeding year until the District reaches the unprotected state now enjoyed by many Urban Districts. The marked increase in the number of exemptions in the last two years is, without doubt, due to the issue of " Form Q," and is not to be attributed to any sudden awakening of the drowsy consciences of rural parents to the enormities of vaccination.

" It is my principal duty, as your Medical Officer of Health, to draw attention to the weak points in the defence of the District against infectious disease ; but I am painfully sensible of the hopelessness of attempting to arouse public attention to the importance of vaccination until an invasion of Small Pox has actually taken place."

Dr. Long writes for *St. Faith's R.D.* :—" As showing how ineffectual is the existing law for carrying into effect the only safe and effective measure for protecting the community against that loathsome and highly infectious disease Small Pox, I give the following returns, furnished to me by the Vaccination Officer of St. Faith's District :—

Year 1908. Births 218.				Year 1909. Births 91.			
Vaccinated	..	..	155	Vaccinated	..	..	59
Conscientious Objection	..		45	Conscientious Objection	..		26
Dead	..	..	14	Dead	..	..	3
Postponed	..	..	2	Postponed	..	..	1
Removed to other Districts			2	Removed to other Districts			2

Dr. Rose, M.O.H. for *Wayland R.D.*, says :—" I have made some enquiries on the subject of vaccination, and have ascertained that during 1909, in the sub-district of Attleborough, there were 121 vaccinations performed and 32 exemptions, while 40 infants have not been as yet accounted for. The number of exemptions in 1908 was 18 ; in 1907, 17 ; in 1906, 8 ; showing a steady increase in the number of unprotected children. In the sub-district of Watton there were 34 exemptions in 1909."

The Medical Officers for *Sheringham* are emphatic :—" We view with apprehension the marked increase in the number of exemptions from vaccination during the last two years, which became possible when it was decreed that it should no longer be necessary for a parent to attend the Magistrates' Court to get the exemption order, and before that, when the conscientious objectors clause was introduced.

" We look upon this cessation of compulsory vaccination as a retrograde measure, and as a real danger to the public health. An unvaccinated population is rapidly growing up in our midst. This of itself does not cause an epidemic of Small Pox, but it supplies the material on which such an epidemic will flourish when Small Pox is again introduced into the community.

“The two factors necessary for an epidemic of Small Pox are—(1) An unvaccinated population, which may be compared to a replenished powder magazine; (2) The virus of Small Pox itself, introduced perhaps by one undetected case in a tramp, which may be compared to the lighted match: the reaction of the latter on the former producing the explosion or epidemic of Small Pox with its enormous fatality in the unvaccinated.

“The introduction of Small Pox into a vaccinated population is comparable to the dropping of a lighted match into an empty magazine—no explosion or epidemic of Small Pox can be produced, as one of the two factors is absent.

“Each individual can almost certainly protect himself from this danger by vaccination and re-vaccination after seven years, but we think that each parent should be made to protect his offspring, just as he is compelled to protect them from cold or starvation; and that the community should by legislation protect itself against the loss of life and expense entailed in an epidemic of Small Pox.

“In Sheringham we estimate that 50 per cent. of the children born during the last two years are unvaccinated.”

The only reports which give exact figures are those for *Aylsham*, *Blofield*, *St. Faith's*, and *Wayland* Rural Districts. Tabulating these we find:—

	Aylsham.	Blofield.	St. Faith's.	Wayland (Attleborough Sub-District).
Primary Vaccinations	287	172	214	121
Exemptions (Conscience Clause) ..	37	43	71	32
Re-vaccinations (by Public Vaccinator)	—	1	—	—

Apparently no summonses were taken out, although the St. Faith's report returns two refusals.

CANCER.

This dreaded form of malignant disease shows a tendency to increase, according to the statistics of the Registrar General. Cancer having an incidence almost exclusively upon persons of or over middle age, renders uncorrected or crude rates of mortality particularly misleading when applied to this disease.

Dr. Stevenson in his letter published in the Seventy-first Annual Report of the Registrar General, presents a table which indicates Cancer to be more destructive in the town than in the country, although the crude rates would seem to show the reverse.

Mortality from Cancer is greater among women than among men, because the mammary and reproductive organs of women are more frequently attacked with Cancer than the generative organs of men. The recorded deaths of males from malignant disease other than of the reproductive organs is, however, in excess of female deaths.

In males, the organ most frequently affected is the stomach; in females, the uterus. The situation of the latter organ unfortunately tends to induce an unfortunate victim to put off what she naturally considers an unpleasant experience—but which is eminently essential at the earliest possible moment—examination by a Doctor. The British Medical Association has lately been considering the best means of disseminating knowledge of the importance of the early recognition of Cancer in the womb, and has drawn up a very excellent pamphlet of hints and precautions, of more extended value than those issued by the Central Midwives' Board for the instruction of Midwives.

In Norfolk, during 1909, 64 deaths were attributed to Cancer in the 12 Urban Districts, and 284 deaths in the 20 Rural Districts, or a total of 348 deaths from Cancer (malignant disease) in the Administrative County, giving a Cancer death rate of 1·10, which is above the average for England and Wales, and only very slightly below the rate for Norfolk in 1908 (1·12).

Analysing the statistics for the component Districts of the County, the Cancer crude death rates for 1909 varied from 2·32 in East Dereham U.D. and 2·22 in Marshland R.D. to ·27 in Walsoken U.D. and ·50 in Loddon and Clavering R.D.

The following comments are found among the Annual Reports :—

East Dereham U.D.—"Thirteen deaths were due to Cancer. We hear a great deal about the increase of Cancer, but there are two factors that must be taken into consideration :—

"1st.—The more accurate diagnosis that is being made each year, owing to the advance of science, and the use that is made of the Clinical Research Association and allied societies, so that the actual malady is recorded and not a symptom or 'senile decay.'

"2nd.—Many who are predisposed to cancerous mischief now live to old age who formerly died of other troubles; for, taking the last thirty years and dividing it into decennial periods, we have an average number of deaths as follows :—

10 years ending 1889	..	..	117·4 deaths
" " 1899	..	..	88·9 "
" " 1909	..	..	81·1 "

"These are the actual deaths occurring in the town."

Aylsham R.D.—"22 deaths were registered as due to Cancer. This is slightly in excess of the number last year, when the number was 17. The average for the previous five years was 21. The Cancer death rate stands at 1·3 per 1000 population, which I find is slightly in excess of the rate for Rural Districts in Norfolk in 1908. I have not, up to the present, made any enquiry as to the causation of Cancer in the District."

Blofield R.D.—Five deaths were registered as due to malignant disease. This gives a Cancer death rate of only ·46, which compares favourably with the rate for the whole County, which in 1908 stood at 1·12.

Depwade R.D.—23 deaths were registered. I give the mortality for the last eight years.

		Males.		Females.		Total.
1902	..	8	..	16	..	24
1903	..	14	..	16	..	30
1904	..	10	..	10	..	20
1905	..	11	..	11	..	22
1906	..	12	..	16	..	28
1907	..	13	..	16	..	29
1908	..	8	..	15	..	23
1909	..	9	..	14	..	23

SANITARY ADMINISTRATION.

The Summaries of the District Reports appended to this Report show what each District Medical Officer of Health has to say for his District. No doubt in some cases the Reports are far too meagre, and make no reference to important points which perhaps the particular District Council is making an effort to deal with—in others it is to be surmised that there is nothing to report—but apart from the Reports I may make to the County Public Health Committee, based on my own visits and observations, the Medical Officers' Reports are the only available authoritative documents on which an opinion can be formed as to the sanitary administration of each District.

HOUSING.

A recent very important legislative enactment—the Housing, Town Planning, &c., Act, dated December 3rd, 1909—requires in the future more detailed information on the housing question, which no doubt will receive proper attention when the District Medical Officers of Health prepare their Annual Reports for the year 1910.

I think I cannot do better in the present Report than to reproduce for convenience of reference the smaller of the two Memoranda issued by the Local Government Board under date December 31st, 1909, which contains an admirable summary of Part I. of the new Act, which part (Section 76) says "shall be construed as one with the Housing of the Working Classes Acts, 1890 to 1903, and that Part of this Act and those Acts may be cited together as the Housing of the Working Classes Acts, 1890 to 1909." The Circular to Town, Urban, and District Councils, dated Dec. 31st, 1909, indicates the more important points as follows:—

"Housing of the Working Classes.

"The principal provisions in regard to this subject are contained in Part I. of the first Schedule to the Act. They may be summarised as follows:—

"(1) Part III. of the Housing of the Working Classes Act, 1890, which enables Local Authorities to provide houses for the working classes, is put in force throughout the whole country.

"This part of the Act of 1890 has in the past been adoptive only, and in Rural Districts could not be adopted without the consent of the County Council. There are many Urban Districts in which that Part has not been adopted, and the Rural Districts in which it has been adopted do not number a score. Yet a large volume of evidence was given before the Select Committee on the Housing of the Working Classes Acts Amendment Bill, 1906, to the effect that there was urgent need for action under Part III. of the Act of 1890 in many Rural Districts, and the Select Committee endorsed this view.

"(2) The new Act greatly increases the facilities for the acquisition of land for the purposes of the Housing Acts. The difficulty of acquiring land for these purposes is one upon which the Select Committee of 1906 laid particular stress. The effect of Section 2 of Schedule I. is to make the powers granted to the Councils of Counties and County Boroughs by the Small Holdings and Allotments Act, 1908, for the compulsory purchase of land for Small Holdings available to Local Authorities acting under Part III. of the Housing of the Working Classes Act, 1890, for the compulsory purchase of land for the purposes of that Part, subject to some modifications as regards land in Urban areas. The extent of the simplification of procedure involved will be recognised when it is remembered that hitherto a Provisional Order confirmed by Parliament has been necessary in every case before authority for the compulsory purchase of land for this object could be obtained.

"(3) Loans can in future be made by the Public Works Loan Commissioners for periods up to 80 years at the minimum rate of interest allowed for the time being for loans out of the Local Loans Fund, and the rate of interest will not vary with the term allowed for repayment.

"The Committee of 1906 laid great stress on the financial aspects of the housing question, and the Board have themselves had many representations from Local Authorities to the effect that such an enactment as that in Section 3 would greatly facilitate their efforts in dealing with the question.

"(4) Powers are given for the enforcement of the execution of the Housing Act. The Board trust that it may not often be necessary to resort to these powers, but they must point out that they are very complete as regards all matters concerning the housing of the working classes, and in particular extend to enable the Board to enforce the inspection required by Section 17 of the new Act, a matter in which certain Local Authorities have in the past been very lax.

"(5) The law as regards the closing and demolition of dwellings unfit for human habitation is simplified and strengthened.

"Local Authorities will, under the new Act, themselves make closing orders, and the powers of a Court of Summary Jurisdiction in this respect will cease.

"(6) The new Act extends to houses of much higher rental than those fixed by Section 75 of the Act of 1890, the condition implied, in the contract for letting, that the house is fit for habitation, and includes in the implication a condition that the landlord shall keep the house in a state reasonably fit for habitation during the holding.

"The need for raising the limit of rentals will be recognised when it is borne in mind that the original limit was fixed in 1885, since which time there has been a considerable rise in the rents of working-class houses.

“Section 15, which requires landlords to keep houses within the rental limits above referred to in all respects reasonably fit for human habitation, gives powers to the Local Authority in regard to landlords who make default in this respect, which, in the opinion of the Board, should prove of great value. The powers vested in Local Authorities of dealing with houses such as those in question have not in the past been very complete; for it was necessary either to prove the existence of a statutory nuisance, or to show to the satisfaction of a Court of Summary Jurisdiction that the house was in a state so dangerous or injurious to health as to be unfit for human habitation.

“The Board trust that the Council will not hesitate to use their powers under the new Section.

“(7) Other important provisions to which attention should be drawn are those contained in Section 17 (7), with regard to underground rooms habitually used as sleeping places, in Section 43, which prohibits the erection of back-to-back houses, and in Section 24, the effect of which is that schemes under Part I. or Part II. of the Act of 1890 will take effect on the issue of the Board's Order confirming them. No such Order will need confirmation by Parliament.

“Reference may also be made to Section 36, which considerably enlarges the power of entry on premises for the purposes of the Housing Acts, and to Section 44, which enables the Board to deal with bye-laws with respect to new streets or buildings if the erection of dwellings for the working classes is unreasonably impeded in consequence of them.”

Owing to unavoidable circumstances, the lateness of the issue of my Report enables me also to incorporate the important Regulations, dated 2nd September, 1910, made by the Local Government Board under Section 17 (1) of the new Act. It will be noted that the District Medical Officer of Health is required in future to incorporate in his Annual Report information and particulars in tabular form on certain clearly-defined lines.

“Housing, Town Planning, &c., Act, 1909.

“REGULATIONS UNDER SECTION 17 (1).

“~~To the several Local Authorities~~ in ENGLAND and WALES for the purposes of Part II. of the Housing of the Working Classes Act, 1890 :—

“And to all others whom it may concern.

“WHEREAS by sub-section (1) of Section 17 of the Housing, Town Planning, &c., Act, 1909, it is enacted that it shall be the duty of every local authority within the meaning of Part II. of the Housing of the Working Classes Act, 1890 (hereinafter referred to as ‘the local authority’) to cause to be made from time to time inspection of their district, with a view to ascertain whether any dwelling-house therein is in a state so dangerous or injurious to health as to be unfit for human habitation, and that for that purpose it shall be the duty of the local authority, and of every officer of the local authority, to comply with such regulations and to keep such records as may be prescribed by the Local Government Board.

“NOW THEREFORE, We, the Local Government Board, in pursuance of the powers given to Us in that behalf, by this Order, prescribe the following Regulations; that is to say:—

“ARTICLE I.—(1) The local authority shall as early as practicable after the date of this Order take into consideration the provisions of sub-section (1) of Section 17 of the Act of 1909, and shall determine the procedure to be adopted under these Regulations, to give effect to the requirements of that sub-section in regard to the inspection of their district from time to time.

“(2) The local authority shall as part of their procedure make provision for a thorough inspection to be carried out from time to time according to the varying needs or circumstances of the dwelling-houses or localities in the district of the local authority.

“(3) The local authority shall cause to be prepared from time to time by the Medical Officer of Health, or by an Officer designated by them but acting under his direction and supervision, a list or lists of dwelling-houses the early inspection of which is, in the opinion of the Medical Officer of Health, desirable. The list or lists may, if thought fit, relate to the dwelling-houses within a defined area of the district without specifying each house separately therein.

“ARTICLE II.—The inspection under and for the purposes of sub-section (1) of Section 17 of the Act of 1909 shall be made by the Medical Officer of Health, or by an Officer designated by the local authority but acting under his direction and supervision, and the Officer making inspection of any dwelling-house shall examine the state of the dwelling-house in relation to the following matters, namely:—

- “ (1) The arrangements for preventing the contamination of the water supply.
- “ (2) Closet accommodation.
- “ (3) Drainage.
- “ (4) The condition of the dwelling-house in regard to light, the free circulation of air, dampness, and cleanliness.
- “ (5) The paving, drainage, and sanitary condition of any yard or outhouses belonging to or occupied with the dwelling-house.
- “ (6) The arrangements for the deposit of refuse and ashes.
- “ (7) The existence of any room which would in pursuance of sub-section (7) of Section 17 of the Act of 1909 be a dwelling-house so dangerous or injurious to health as to be unfit for human habitation.
- “ (8) Any defects in other matters which may tend to render the dwelling-house dangerous or injurious to the health of an inhabitant.

“ARTICLE III.—Records of the inspection of dwelling-houses made under and for the purposes of sub-section (1) of Section 17 of the Act of 1909 shall be prepared under the direction and supervision of the Medical Officer of Health, and shall be kept by the Officer of the local authority making the inspection or by some other Officer appointed or employed for the purpose by the local authority.

“The records may be kept in a book or books or on separate sheets or cards, and shall contain information, under appropriate headings, as to:—

- “1. The situation of the dwelling-house, and its name or number.
- “2. The name of the Officer who made the inspection.
- “3. The date when the dwelling-house was inspected.
- “4. The date of the last previous inspection and a reference to the record thereof.
- “5. The state of the dwelling-house in regard to each of the matters referred to in Article II. of these Regulations.
- “6. Any action taken by the Medical Officer of Health, or other Officer of the local authority, either independently or on the directions of the local authority.
- “7. The result of any action so taken.
- “8. Any further action which should be taken in respect of the dwelling-house.

“ARTICLE IV.—The local authority shall, as far as may be necessary, take into consideration at each of their ordinary meetings the records kept in pursuance of Article III. of these Regulations, and shall give all such directions and take all such action within their powers as may be necessary or desirable in regard to any dwelling-house to which the records relate, and a note of any directions so given and the result of any action taken shall be added to the records.

“ARTICLE V.—The Medical Officer of Health shall include in his Annual Report information and particulars in tabular form in regard to the number of dwelling-houses inspected under and for the purposes of Section 17 of the Act of 1909, the number of dwelling-houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the local authority with a view to the making of closing orders, the number of closing orders made, the number of dwelling-houses the defects in which were remedied without the making of closing orders, the number of dwelling-houses which after the making of closing orders were put into a fit state for human habitation, and the general character of the defects found to exist. He shall also include any other information and particulars which he may consider desirable in regard to the work of inspection under the said Section.

“ARTICLE VI.—The Medical Officer of Health and any other Officer of the local authority shall observe and execute all lawful orders and directions of the local authority in regard to or incidental to the inspection of the district of the local authority under and for the purposes of Section 17 of the Act of 1909, and the execution of these Regulations.

“ARTICLE VII.—In these Regulations ‘the Act of 1909’ means the Housing, Town Planning, &c., Act, 1909.

“ARTICLE VIII.—These Regulations may be cited as the Housing (Inspection of District) Regulations, 1910.”

As regards the County Council, Section 6 of the Act of 1900 is superseded by Section 12 of the new Act. Sections 12 and 13 of Part I. of the Act of 1909 give powers to act in default of a Rural District Council under Part III. of the Act of 1890, where a complaint is made to the County Council by the Parish Council or Parish Meeting of any parish in any Rural District of the County, or by any four inhabitant householders of that district. The jurisdiction of the County Council set out in Section 65 (iii.) of the principal Act, as amended by the Act of 1900, now ceases, the Section being repealed by the new Act. Section 69 defines the duty of the Clerk and Medical Officer of Health of a District Council to furnish reasonable information to the Medical Officer of Health of the County Council.

Before deciding that a Local Authority have failed to exercise their powers under Part III., the Board are required to take into consideration (1) the necessity for further accommodation for the housing of the working classes in the district, (2) the probability that the required accommodation will not be otherwise provided, and the other circumstances of the case, and (3) whether, having regard to the liability which will be incurred by the rates, it is prudent for the Local Authority to undertake the provision of such accommodation

For the year 1909 the following references to the Housing question appear among the District Medical Officers’ Annual Reports, in addition to the notes recorded in the Summaries :—

Urban Districts.

King’s Lynn M.B.—“Old Buildings: During the year ending 31st December, 1909, eight notices to remove dangerous buildings have been served, all of which have been complied with.

“Property Unfit for Human Habitation: The following insanitary dwellings have been reported on during 1909, and dealt with by the Health Committee under the Housing of the Working Classes Act:—One house situate at the back of 55, Friars Street. Magisterial proceedings were taken against the owner, and a closing order made.—Eight houses situate in California Yard. Magisterial proceedings were taken against the owner. The case was adjourned on an undertaking being given to carry out the order of the Sanitary Authority. The work is now proceeding.—Two houses situate in Crow’s Yard, Church Street. Magisterial proceedings were taken against the owner. This case was also adjourned on an undertaking being given to carry out the order of the Sanitary Authority. The work is now proceeding.—Two dwelling-houses situate in Bardell’s Yard, Pilot Street. Proceedings being taken.—Two houses situate in California Yard. Work proceeding.”

Thetford M.B.—Dr. Harris writes :—“In the poorer quarters of the town there are many cottages which need much improvement in the way of sanitation, and there are several which I should like to see condemned; but they are inhabited by the poorest of the population, who cannot possibly afford to pay the rent for better and larger cottages with better sanitary arrangements; and until some scheme is devised whereby they can be provided with better dwellings at a rental within their means, one must hesitate in condemning the present ones. Early in the year a house-to-house inspection of the Pike Lane area, probably the worst in the town, was made, and a detailed report sent to the Council pointing out the necessary improvements required. Up to the present, as far as I am aware, no action whatever has been taken.”

Cromer.—A house-to-house inspection of Suffield Park was made, but no details are given in the Annual Report.

Downham Market.—“The housing of the working classes is, on the whole, adequate.”

Diss.—"There is a need for a certain class of house (cottages and small villas)."

Sheringham.—"The housing of the people of Sheringham is satisfactory."

North Walsham.—"There is ample house accommodation for the working classes, and most of the houses have plenty of open space around them and have good surroundings. Many artisans' dwellings have been built of recent years along the roads leading from the town proper. There is no special supervision by the Sanitary Authority over the erection of new houses. Some of the houses in the older parts of the town are crowded together, and suffer from want of light and air; but there is certainly a tendency for all classes to get into the newer houses. Many of the shops in the town, where the accommodation and space have been limited, have ceased to be used as dwellings, and are now used for business purposes only."

Wells-on-Sea.—"The house accommodation for the working classes is on the whole sufficient, though there are a few cases of large families where overcrowding is almost inevitable. The houses are mostly old and huddled together, with, in some places, lack of sufficient air spaces between them. Scarcely any new cottage property has been erected for many years."

Rural Districts.

Aylsham.—Dr. Back writes—"In former reports I have frequently drawn attention to the fact that, whereas on some of the larger estates excellent cottages kept in a good state of repair are to be found, in many villages where the cottages are in the hands of small owners the class of cottage prevailing is far below the standard in which a family can be housed in common decency and comfort.

"It has always been a matter of the greatest difficulty to decide under what conditions a cottage should be considered as 'unfit for human habitation.' Although a cottage might be very clearly unfit for the habitation of the family actually occupying it, it might, nevertheless, provide a suitable shelter for a single individual or a couple without a family, and when so occupied be considered 'fit for human habitation.' In the new Act only two specific conditions are stated as in themselves constituting 'unfitness,' namely, 'back to back' cottages and underground sleeping rooms of less than the prescribed dimensions. In this district it has become the practice to condemn as 'unfit for human habitation' only those cottages which have not a watertight roof.

"Up to the present the only method of dealing with a generally unsatisfactory cottage with insufficient accommodation for the family occupying it, has been to report it as overcrowded. The occupier, under this procedure, is held responsible for the condition complained of, and is called upon, under penalties, to provide within a specified time suitable house accommodation for himself and family. When such action has been contemplated it has been almost invariably discovered that no suitable cottage is available in the locality, and that, were the action persisted in, the person proceeded against would be driven from his work, and would in all probability become an inmate of the Workhouse. It is needless to add that in most instances it has been found convenient to leave overcrowded cottages alone, and only in those cases where the number of occupants could be reduced by the expulsion of a lodger or of grown-up members of the family, has any good resulted from interference. During the past year, however, five cases of overcrowding have been dealt with more or less satisfactorily.

"In the future it will be my duty to bring before you all cases of overcrowding that come to my notice, and where this condition appears due in any particular village to an insufficiency of good cottages, to urge the necessity of carrying out the provisions of the Act of 1909."

Blofeld.—In his report for this Rural District Dr. Back again says—"Much useful work has been carried out by the Inspector during the year, especially in connection with the additions to the Register of dwelling-houses in which the sanitary condition of cottages is described in detail. In addition to the abatement of nuisances caused by collections of filth, many nuisances have been dealt with which necessitated structural alterations resulting in the permanent improvement of the sanitary condition in the District.

“ Under the provisions of the Housing and Town Planning Act of 1909, which came into operation on December 3rd of last year, much improvement may be expected in the near future in the cottage accommodation of the District; Part III. of the Housing of the Working Classes Act, 1890, becomes operative without being specially adopted, and additional powers have been granted to Rural District Councils in the matter of closing cottages unfit for human habitation. The terms on which money may be borrowed for the building of cottages in localities where cottage accommodation is inadequate have been made easier, and the procedure simplified. It would also appear that should a Rural District Council not exercise the powers granted under this Act pressure will be brought to bear from either the Local Government Board or the County Council to encourage action being taken.

“ Under Section 17 of the new Act it is the duty of a Rural District Council ‘to cause to be made from time to time an inspection of their District, with a view to ascertain whether any dwelling-house therein is in a state so dangerous to health as to be unfit for human habitation.’ An inspection of this character was commenced in your District in the Autumn of 1908, and there are already records of the sanitary condition of 305 cottages in the register. Up to the present the Inspector has confined his attention to the following eleven Parishes, the figures attached denoting the number of cottages he has inspected in each:— Blofield, 37; Burlingham, 6; Freethorpe, 32; Halvergate, 76; Limpenhoe, 14; Moulton, 5; Great Plumstead, 11; Ranworth and Panxworth, 13; Reedham, 70; Upton, 14; South Walsham, 27. The information concerning the sanitary condition of the cottages includes (1) the number of living and sleeping rooms and the number of inmates; (2) description of privy; (3) whether garden or not; (4) water supply; and (5) drainage.

“ With the view of estimating the extent of overcrowding in the 305 cottages already inspected, I have made an analysis of the sleeping accommodation in those which have six or more inmates. I find that—

In cottages with 1 bedroom	1 is occupied by 6 persons.
“ “ 2 bedrooms	11 are “ 6 “
“ “ 2 “	7 “ “ 7 “
“ “ 2 “	2 “ “ 8 “
“ “ 2 “	3 “ “ 9 “
“ “ 2 “	1 is “ 11 “
“ “ 3 “	11 are “ 6 “
“ “ 3 “	2 “ “ 7 “
“ “ 3 “	2 “ “ 8 “
“ “ 3 “	1 is “ 9 “
“ “ 3 “	1 “ “ 10 “
“ “ 3 “	3 are “ 11 “

Of the cottages with more than 3 bedrooms 3 are occupied by 6 persons.

“ “ “ 3 “ 3 “ 7 “

“ In considering the above figures, it must be borne in mind that ‘two bedrooms’ frequently means that a not very large room has been divided into two by a wooden partition, or that one of the rooms is merely a small lean-to chamber. A three-bedroomed cottage has often but one fair-sized room with a lean-to chamber divided into two. It would therefore not be surprising to find among these 51 cottages, each with more than six inmates, several cases of overcrowding.

“ In the parish of Halvergate the inspection of cottages has been very nearly completed, the register containing 76 records. Among these are to be found—

1 cottage with 1 bedroom and 6 inmates.
1 “ 2 bedrooms and 6 “
1 “ 2 “ 7 “
1 “ 2 “ 8 “
2 “ 2 “ 9 “
1 “ 2 “ 11 “
2 “ 3 “ 6 “
1 “ 3 “ 8 “
1 “ 3 “ 10 “
1 “ 3 “ 11 “
2 cottages with more than 3 bedrooms and 7 inmates.

“ It would seem from this evidence of overcrowded dwellings that the cottage accommodation in Halvergate is insufficient for the requirements of the working classes, but more extended investigation is required before the Council would be justified in taking any definite action.

“ For the improvement of the general sanitary condition of the cottages in the District I would urge that full advantage be taken of Sect. 15 of the new Act, which deals with the obligation of the landlord to maintain “ in all respects reasonably fit for human habitation ” cottages let at an annual rent of not exceeding £16. The procedure under this Section of the Act is exceedingly simple, and if the Council availed themselves of the powers which it confers on them much useful work could be done in a short time.”

Depwade.—Dr. Robinson reports :—“ As regards the housing of the working classes, gradual improvement is noticeable. The administration of the ‘ Housing, Town Planning, etc., Act, 1909,’ will accelerate the progress, no doubt, but it will be a heavy weapon to wield.

“ Nine cases of overcrowding have been reported and remedied ; they occurred in the following parishes :—Denton 1 case, Earsham 1, Harleston 1, Roydon 1, Starston 1, Tacolnestone 2, Tasburgh 1, Needham 1.

“ New houses have been erected in Harleston, Tibenham, and Winfarthing ; a new cottage at Tharston.

“ Fourteen notices have been served on Van-dwellers and others, in accordance with Bye-laws respecting Tents, Vans, Sheds, and such structures, which came into force on March 1st. I here note that an overcrowded van, served with a notice, generally moves out of the district.

“ In Bunwell a man was found living in an outhouse which was unfit for habitation ; he was received in your Union Workhouse.

“ House at Roydon found to be in a condition unfit for human habitation, also overcrowded, was closed upon your order.

“ Several premises have been put into habitable repair that were found in unsafe condition.”

Downham.—Dr. Cross writes :—“ There is no doubt that in certain parts of the district there is a scarcity of houses for the labouring classes, and cases of overcrowding are not uncommon. When the question of closing old houses as being unfit for human habitation arises, the problem of where the tenants are to find homes makes one hesitate in recommending that orders should be applied for, and inclines one to adopt less drastic measures. The rents that agricultural labourers can pay are not in proportion to the present cost of building, and unless means can be found to increase the rent-paying capacity of the former, or to reduce the latter, it is difficult to see how conditions can be improved. In my last year’s Report I gave as an example two rows of cottages in Barroway Drove. One of the most useful sections of the new Housing Act, 1909, is that which empowers a County Council to promote the formation of co-operative working class Building Societies. I believe that this will be one of the means of effecting improvement in the housing of the working classes, and would enable some to become the owners of their homes. I don’t think it is any exaggeration to say that if you deduct from the total sum of disease at any one time existing in the country all that can be clearly and unmistakably traced to human and preventable causes—to obvious sanitary deficiencies on the one hand, or, on the other, to vice or folly, or both, either in the individual (suffering) or in his parents—you would have a comparatively small amount to be dealt with. You may be able to show how many people die of bad drainage in some particular place, or of the effects of drink and vice, but no figures can give the infinitely larger sum total of strength broken and constitution ruined from the same causes, the number of instances in which no immediate result is seen to follow ; but when some slight and casual attack of illness comes on, the man, previously weakened, has no power to resist it and dies. In sanitary matters, at least, the future of the world need not be like its past. Take the overcrowding and foul air inside, and undrained yards with foul refuse outside, which so helps up the death rate. The cause is not in the arrangements of

nature, but in ourselves, and the fault lies as much with the tenant as with the landlord. There should be for working men and their families good and cleanly houses, plenty of air and light, fit places for the storage of food and proper sanitary arrangements outside. If these conditions were fulfilled we should have children healthy in body and mind, and living in houses which make self-respect possible. There are no Building Bye-laws in force. During the year eleven new houses have been built and five more are in course of erection. Supervision has been kept over these, and where alterations have been suggested they have been readily carried out. Extracts from the Inspector's Journal show:—Houses visited for special purposes 132, houses visited for house-to-house inspection 175, houses cleaned and limewashed 4, structural and miscellaneous improvements 8, revisited 162."

Erpingham.—"Many more cottages are needed to obviate overcrowding."

Forehoe.—Dr. Lack says—"There are sufficient houses, and there is a gradual improvement in the condition of the dwellings. New houses have been built, and others repaired in Hingham, Wymondham, Morley, Wicklewood, Costessey, and Hackford, and overcrowding has been abated in five houses in Wymondham."

Henstead.—House accommodation reported in 1908 as insufficient. In 1909, "the same."

Freebridge Lynn.—Particular attention has this year been paid to the condition of cottages and the poorer dwellings in the District, and house-to-house inspections have been made. In one Parish (East Winch) 83 dwellings were visited by the Medical Officer of Health, accompanied by the Inspector of Nuisances. In no less than 30 cottages evidences of much dampness were visible. This was found to be due to defective spouting and guttering. In nearly all the cottages repairs and improvements have been effected so as to render them fit for human habitation. In consequence of the action taken by the Rural District Council, five houses were voluntarily closed, being beyond repair or thought not to be worth the necessary outlay. Eighteen new houses were constructed during the year. These have all been inspected and found to be satisfactory with regard to water supply and sanitary arrangements, viz., Gaywood 10, Leziate 2, Roydon 2, North Runcton 2, West Winch 1, and North Wootton 1.

Marshland.—Certificates have been granted for the occupation of 31 new houses—8 in Outwell, 1 in Upwell, 2 in Emneth, 4 in West Walton, 2 in Walpole St. Peter, 1 in Walpole St. Andrew, 2 in Tilney St. Lawrence, and 11 in Terrington St. Clement. There is still a demand for labourers' cottages in the District. Orders were made for the construction of 27 cisterns and 5 privies to existing houses. No case of overcrowding was reported.

Smallburgh.—Dr. Wright writes—"Housing accommodation remains in many places unsuited to modern air space and morals, and many cottages are sadly in need of repair. There is not sufficient power for supervision over the erection of new premises. Provided there was a supply of good water, a builder might erect any sort of house in any position and with any system of drainage, good, bad, or indifferent. It is to be hoped that this will soon be altered."

Swaffham.—Cottage accommodation is generally insufficient. (See Summary.)

Thetford.—(See Summary.)

Walsingham.—"Insufficient accommodation for the labouring man with a large family still exists. The problem is difficult to solve."

Wayland.—"House accommodation still unsatisfactory and inadequate, but there is some progress towards better conditions." (See also Summary.)

FOOD SUPPLIES.

Sale of Food and Drugs Acts, 1875—1909.

The Local Government Board in 1906 established a separate Sub-division of its Medical Department for advising the Board as to the administration of these Acts. The Board, in a Memorandum addressed to Counties, dated December 20th, 1909, directed attention afresh to Section 19 of the Sale of Food and Drugs Act, 1875.

The Local Government Board desire that the County Analyst should furnish, either in his Quarterly Report or otherwise, a statement regarding the nature and the result of any informal samples submitted to him. "If, with a view to preliminary investigation, any informal samples have been collected and dealt with otherwise than by submission to the Public Analyst," the Board would like a short statement of the procedure adopted.

The Board concur in a suggestion to County Councils to furnish Sanitary Authorities within their jurisdiction with information as to the work done in the Districts under the Sale of Food and Drugs Act by officers of the County Council.

In respect of administrative action in regard to offences, the Board desire to receive information in regard to each sample adversely reported on by the Public Analyst, and in regard to other breaches of the Acts reported, showing what legal proceedings have been taken, the result of such proceedings, the respective amounts of the fines inflicted and the costs paid, giving the fines and costs separately. Where prosecution has not been considered advisable, the Board wish to know the circumstances which have determined the decision, and the precise action taken, the information to be given in such a form as to enable the identification of any particular sample. The Board also wish to know the results of pending proceedings in respect of offences committed in 1909. The Board expresses a desire that the system of reporting under "groups" will be adopted by the Analyst in his Quarterly Reports.

The Board are also of opinion that Sampling Officers who transmit samples to the Analyst for analysis should, in all cases, inform the Analyst of any statement made by the Vendor at the time of sale which bears on the quality of the article, and that his attention should be drawn to any such statements or declarations on labels, packages, tins, bottles, or wrapping paper.

For many years the Norfolk County Council have appointed Mr. Francis Sutton, F.I.C., F.C.S., Public Analyst, and Mr. W. Lincolne Sutton as Deputy Public Analyst. The Analyst reports to the Public Health Committee quarterly and annually.

The following is a Summary of the County Analyst's Report for the year ending 31st March, 1910 :—

No. of Samples.	Articles Submitted.	Genuine.	Adulterated.
125	Milk	109	16
2	Condensed Milk ..	2	—
26	Butter	26	—
1	Margarine	1	—
4	Cream	3	1
15	Baking Powder ..	14	1
12	Vinegar	11	1
7	Ginger Wine	4	3
1	Cherry Brandy ..	—	1
4	Raisin Wine	3	1
9	Jams	8	1
98	Miscellaneous ..	96	2 } 1 suet 1 } 1 camphorated oil
Grand total		304 samples.	
Genuine		277	„
Adulterated		27	„
Percentage of Adulteration		8·9	

Mr. Lincolne Sutton's comments are as follows :—

“The total number of Samples submitted is the same as last year, viz., 300, with the addition of four informal samples taken by one of the Inspectors in order to investigate a case of suspected adulteration of butter of which he had private information. I think it would be well that the Inspectors had general authority to take such informal samples, up to a specified maximum, in order that they may be able to follow up information which may reach them. It is frequently necessary to take a few such informal samples in order to ascertain where suspected products are being sold, and thus gain information as to where an official sample is most likely to be successful. It frequently happens also that where an agent is employed he or she will not be served with an adulterated article until suspicion has been allayed by one or two previous purchases on the part of the agent.

“The actual number of samples taken is at the rate of less than 1 per 1,000 of the population of the administrative county. The percentage of adulteration is .7 per cent. lower than last year.

“Particulars of the cases of adulteration are as follows : Twelve samples of milk were deficient in fat, with deficiencies varying from 3 per cent. to 26.6 per cent. Two milks were both deficient in fat and watered, and one milk contained $19\frac{1}{2}$ per cent. added water. It is satisfactory to note that the serious offence of adding boracic acid to milk only occurred in one case, where 4.72 grains of boracic acid per pint were present. One sample of cream contained $38\frac{1}{2}$ grains per pound of boracic acid as preservative. The addition of boracic acid to cream is allowed to a reasonable extent, but the amount in this case was returned as excessive.

“There is a case for the use of preservative in cream, but it must be kept within bounds by inspection under the Acts, and it is important that preserved cream as an article of commerce should be distinguished by declaration from a cream which contains no added preservative. During the year the Local Government Board issued a report by Dr. Hamill, ‘On the use of Preservatives in Cream.’ This is one of the series of valuable reports on foods which have been, within the last year or two, issued by the Board. They should form a useful and practical basis for the issue of those Regulations dealing with food, which have been advocated for many years past as an indispensable adjunct to the administration of the Sale of Food and Drugs Acts, under the present conditions of the food supply of this country. If they are framed with the knowledge and thoroughness displayed in the reports referred to, the sooner they come the better.

“The whole question of preservatives in the present state of the law is a difficult one to deal with under the Acts. For instance, four non-alcoholic, so-called, ‘wines’ were certified by me to contain excessive amounts (varying from $2\frac{1}{2}$ to $10\frac{1}{2}$ grains per pint) of salicylic acid as preservative. Three of these were dismissed on technical grounds, and in the worst case only a nominal fine was inflicted. There is no doubt that the conduct of such cases by a solicitor would be of great assistance to the Inspectors. During the present year, at any rate, there has been little encouragement in the attempt under the Acts to keep this indiscriminate dosing of the public within bounds.

“One sample sold as Vinegar was returned as ‘dilute acetic acid, coloured and flavoured,’ and as not of the substance and quality demanded, on the ground that vinegar, whether qualified by the word ‘malt’ or not, should be a brewed product. This acetic acid is much inferior to genuine brewed vinegar, and, in my opinion, should be sold as ‘Table Acetic Acid,’ or some description not including the word ‘vinegar.’ This is another article in regard to which regulations are called for, and one of the Local Government Board food reports, already referred to, deals with it.

“One sample of Baking Powder was certified as being badly deficient in gas-producing power. As baking powder is bought for its leavening properties, I am of opinion that a powder which does not leaven is not of the substance and quality demanded. I am the first analyst, I believe, who has certified for this offence.

“One sample of Suet consisted solely of cocoa-nut oil, and was certified as not genuine on the ground that ‘suet’ should be an animal fat, and not a vegetable fat with a low melting point like cocoa-nut oil.

“The Inspectors have, as usual, exercised great judgment in the nature, range, and distribution of the articles taken for analysis.

(Signed) “W. LINCOLNE SUTTON,
“Deputy Public Analyst.”

Preservatives in Foods.

The Analyst's remarks on the question of preservatives in foods deserve attention. The tendency to extensively use chemical preservatives in the preparation of preserved cream, and in meat foods packed in cans or glass, and probably in connection with other “curd” foods, such as bacon, is one that should be severely checked, because although the amount of boric acid found in any one sample may be comparatively small, yet in the course of a day a considerable amount of this drug may be ingested, if there is a little in the milk, some more in the cream, and again in the butter, the bacon, etc., etc. The use of preservatives in milk is particularly obnoxious, because milk is the principal (almost the sole) article of diet for many infants and young children, and their digestive organs are easily upset by small repeated doses of the drug. It is therefore a matter for congratulation that boracic acid was found in only one sample of milk examined during the year. If clean cows are cleanly milked into clean vessels in a clean cowshed, and if the milk is at once cooled and cleanly dealt with in all its subsequent course to the consumer, there is no need for the addition of preservatives. Where proper precautions are taken in the meat-canning trade, manufacturers no longer claim that their use is necessary. Dr. MacFadden, who investigated the subject for the Local Government Board, reported that “in certain cases it had become a matter of commercial necessity in consequence of the objectionable conditions under which the meat was stored or prepared prior to canning.” The proper remedy obviously is to remedy the objectionable conditions and omit the preservative, no longer necessary under clean conditions.

In March, 1909, I gave evidence on behalf of the County Council in a prosecution at Diss, where a conviction was obtained in respect of a sample of Baking Powder which was certified by the County Analyst to be adulterated with alum to the extent of 37·7 per cent. The defendant was fined 6d. and 19s. 6d. costs. Alum is found in minute quantities as phosphate of alumina in wheat, but that does not justify an excessive addition of an astringent and constringent drug to articles used as food, or in the preparation of food, and the bench adopted this view in convicting the defendant of a breach of Section 6 of the Food and Drugs Acts, 1899. The fine was a small one because the actual seller (the defendant) was unaware of the nature of the Baking Powder.

The three Inspectors of Weights and Measures are also Inspectors under the Food and Drugs Acts for the County Council, and report to the Public Health and Housing Committee. Each has been authorised to take 100 samples of foods or drugs a year. The Public Health and Housing Committee recognise the importance of taking more samples of Milk, especially at certain seasons in certain localities, and have recently asked the County Council to extend their powers in this direction.

Dr. Hamill, during 1909, on behalf of the Local Government Board inquired into various questions relating to the adulteration and misdescription of vinegar, and issued a Report in 1908, drawing attention to the varieties of vinegar which are prepared in this country, and to the distinctions between brewed vinegars from malt and other saccharine substances, and so-called “vinegars” which are prepared by diluting, colouring, and flavouring commercial acetic acid, which latter are inferior and cheaper to make.

An attempt was made by the Norfolk Sanitary Committee to apply their existing powers to prevent the sale as vinegar of merely coloured and flavoured solutions of acetic acid. A sample taken by Inspector A. Robinson was certified by the Public Analyst to be “dilute acetic acid, coloured and flavoured, 100 per cent.”; and a prosecution was ordered, but the Magistrates declined to convict, on the ground that they did not feel themselves called upon to determine the constituents of vinegar.

Prosecutions were ordered by the Committee in connection with the following samples, and the results of prosecution are also given, the amount of Fines being given separately from costs. *I am indebted to the respective Inspectors for the Returns for each Division—E., W., and C.*

Letter & No. of Sample.	Nature of Samples.	Adulteration certified by Analyst.	Results of Prosecution.
E 630	Baking Powder	37·7 % Ground alum	Fined 6d. and 19/6 costs at Diss, March 10, 1909
E 660	Milk	11·6 „ devoid of fat	Fined 1/- No costs, Loddon, June 16, 1909
E 662	„	Ditto	Ditto
E 666	Vinegar	100 „ Acetic acid	Dismissed
E 696	Milk	7 „ devoid of fat 5·75 „ added water	Cautioned. Widow in a small way of business
W 404	„	7 „ added water	Dismissed (Mistake made in dates)
W 426	„	9 „ deficient in fat	Fined 1/- and 10/- costs
W 346	„	16 „ „	Fined 1/- and 10/- costs
W 429	Cream	38½ grs. Boric acid per lb.	Dismissed*
W 431	Milk	10·7 % added water 5 „ deficient in fat	Fined 5/- and 10/- costs
C 661	„	Contained only 2·2 % of milk fat	Fined £1/3/4 and costs 16/8
C 692	„	Do. 2·73 „	Fined £1 and costs £1/1/4
C 696	„	Do. 2·43 „	Fined £1 and costs £1/6/6
C 701	„	19½ % of added water	Fined £1 and costs 14/8
C 703	„	4¾ grs. Boric acid per pt.	Fined £1 and costs 14/8
C 702	„	9 % devoid of fat	Fined 1/- and costs 14/8

* On the ground that the cream was already sold to a customer and that no sale was effected to the Inspector.

It is interesting to note from the above table that the Magistrates in the Central District appear to take a more serious view of the penalties due for the adulteration, or unlawful reduction in the nutritive properties, of food than their colleagues in the East and in the West.

It is no excuse for the selling of milk which is watered and has had its cream abstracted (rendering it a starvation food), that the Vendor is a widow in a small way of business; and as for people in a large way of business, who sell water for milk, or milk minus some of its cream as “whole” milk, a few exemplary fines of £5 or more would have a salutary effect on those who are guilty of defrauding the poor, and little children—for this is the truth in plain language, and the truth is sometimes ugly.

In July, 1909, I visited the fruit-picking districts in the neighbourhood of Walsoken and Terrington, and embodied the results of my enquiries in a report to the Employment of Children Act Committee.

Shellfish.

In August, 1909, at the request of Mr. Hamon le Strange, Chairman of the Eastern Sea Fisheries Committee, who most kindly and courteously arranged the expedition and accompanied it in person, I made a topographical investigation of the mussel beds and layings in the Wash, and obtained samples of mussels from the Norfolk side for analysis. I am indebted

also to the kind courtesy of Mr. Taylor, the Chairman of the Lynn Fishery Committee, and to Mr. Donnison, Inspector of the Eastern Sea Fisheries, for much useful local information. Dr. Bulstrode is preparing a report on the Mussel Industry in its relation to Public Health, for the Local Government Board. I venture to think the layings in the Wash will compare favourably with others. The Analysts reported as follows :—

“ Norfolk and Suffolk County Laboratories,

“ Redwell Street, Norwich,

“ 29th September, 1909.

“ CERTIFICATE OF ANALYSIS—BACTERIOLOGICAL.

“ Samples of mussels, cockles, mud, and seaweed (*Ulva lattissima*) received from Dr. Nash, Medical Officer for the County of Norfolk, marked—

“ Mussels from Pandora Sands, the Wash.

“ Cockles from Daseley Sands, the Wash.

“ Mud from Pandora Sands, the Wash.

“ We have carefully examined the above samples, and find the results of the analysis to be as under :—

“ The shellfish were examined by the usual bacteriological methods for the organisms *B. coli* and *B. enteritidis sporogenes*, and the mud for *B. coli*, the presence of which in large numbers is strong presumptive evidence of pollution by sewage.

“ The results of our tests indicate that both the mussels and cockles contained certainly less than 10 *B. coli*, and less than 10 *B. enteritidis sporogenes* per shellfish respectively.

“ This is a very good result, and is, in our opinion, conclusive evidence that these mussels and cockles are not polluted by sewage, and are fit for consumption.

“ This conclusion is supported by the fact that *B. coli* was not found in 1-100th of a gramme of the mud, indicating that the beds were free from sewage deposit. The nitrogen-content, moreover, of the seaweed (*Ulva lattissima*) found growing in the beds was 3.25 per cent. only, whereas in polluted situations this weed, which has a remarkable power of assimilating nitrogenous matter, is found to contain double this percentage of nitrogen.

“ (Signed) FRANCIS SUTTON & SON.”

Dr. Fisher, M.O.H. for the Walsingham Rural District, reports :—“ The cockle and mussel beds at Stiffkey and Blakeney have again been inspected, and the mussel-lay holders at Blakeney have been circularised, drawing their attention to the dangerous practice of storing the mussels within the neighbourhood of the sewer outfall in the harbour.”

Food Inspection and Seizure.

The Sanitary Inspector of King's Lynn reports :—“ On the 20th March I seized certain meat, namely, one shoulder of mutton, one piece of loin of mutton, and one leg of mutton, exposed for sale and intended for the food of man. The meat was examined by the Medical Officer of Health, also submitted to a Justice of the Peace, who condemned same and ordered it to be destroyed. The case was brought before the magistrates and dismissed.”

“ Four whole carcasses and three part carcasses of beef were forfeited and destroyed as tubercular, as was also a tubercular beast liver. Two carcasses of beef were destroyed on account of parturient fever, and three carcasses of mutton as unfit for food.”

Ptomaine Poisoning.

In May, 1909, several families in South Runcton, Wimbotsham, and Stow, in the Downham Rural District, were attacked simultaneously with illness, the symptoms being dizziness, sickness, diarrhoea, and severe abdominal pains. The illness was attributed to some Pork Cheese (Brawn), and probably correctly, though for scientific purposes a more thorough investigation into all the circumstances of the case than is included in the report of the Sanitary Inspector to the Rural District Council on June 4th, 1909, would have been acceptable.

So far as the information obtained goes it would appear that a certain pork cheese was made on Thursday, May 20th, 1909, most of which was sold the following day (Friday, the 21st) and apparently eaten with impunity. On Saturday, May 22nd, several (?) families purchased small quantities of 1 lb. or less of the pork cheese. The illness affected eight households containing 49 persons. Of these 49 persons, 38 partook of the pork cheese, and 11 did not. The only persons attacked with illness were 18 among the 38 who partook, or nearly 50 per cent. The symptoms developed within one to five hours of eating the pork cheese. A sample of the pork cheese was obtained from one of the affected parties and forwarded to the public analyst, who reported that putrefaction had set in when the sample was received. Decomposed protein toxic bodies of a ptomaine nature were, of course, present. No bacteriological investigation for the isolation of the organisms present was made. The probabilities would appear to be that putrefactive processes began in places in the pork cheese after the first 24 hours, and that those who partook of the more affected parts naturally suffered from symptoms of a toxic nature.

The Sanitary Inspector reported that "the premises where the pork cheese was made were inspected and found in a clean state; the indications pointed to every care being taken in its manufacture." It would have been interesting to know where it was kept during the Friday night, for the history clearly indicates that the pork cheese was quite wholesome on the Friday but dangerous in parts on the Saturday.

In connection with milk and butter supplies, Dr. Long, M.O.H. of St. Faith's, reports to the District Council that "there is considerable difficulty in obtaining milk and butter with some of the inhabitants in the more isolated parts of the district, for which reason in connection with some dairies we can only insist upon such conditions as are best under the circumstances; otherwise, one would entirely cut off the milk supply from an area of several square miles."

The District Reports generally indicate that a considerable improvement in the condition of cowsheds and dairies has been effected chiefly through the adoption of the Model Regulations of the Local Government Board.

Tuberculous Milk.

No action appears to have been taken by any Sanitary Authority in the County with a view to the detection of cows suffering from tubercular disease of the udder.

The London County Council (General Powers) Act, 1907, Part IV., empowers its County Medical Officer of Health or other duly authorised person to take, within and without the County of London, samples of milk produced or sold, or intended for sale, within the County; and in company with a Veterinary Surgeon to enter any dairy from which milk is being sold, or suffered to be sold or used within the County, and to inspect the cows kept therein; and if the Medical Officer or such authorised person has reason to suspect that any cow is suffering from tuberculosis of the udder, he may take samples of the milk of such cow. If it appears to the Council that tuberculosis is caused, or is likely to be caused, to persons residing in the County of London from the consumption of milk from any dairy, or from any cow kept therein, the Council may make an order prohibiting the supply of such milk in the County (under penalty) until the order has been withdrawn. Appeal may be made.

Norfolk is one of the counties outside London which supplies milk to the Metropolis, and in the latter half of 1908, when the Act became operative, one sample of Norfolk milk was taken and found not to be tuberculous. In March, 1909, however, I received a communication from Sir Shirley Murphy, the London County M.O.H., relative to a pending visit to Norfolk by a Veterinary Inspector of the London County Council to examine some suspected cows. I reported to the County Sanitary Committee in June, 1909:—

"I arranged to meet the train by which the Inspector arrived. Inquiry on the spot showed that the milk from the suspected farm did not go to London so far as the owner knew. If it went to London it could only go indirectly from Norwich. The cow-keeper, was, however, willing to have his cows examined by the Veterinary Inspector, and gave every assistance; the result being that two cows were found with distinctly tuberculous udders, and two others were suspicious. The cowsheds were fairly satisfactory, and the cows well looked after. The cow-keeper agreed not to send any more of the suspected milk for human consumption, and was warned against giving it to the pigs and calves. I communicated with the Medical

Officer of Health of the District and with the Medical Officer of Health of the City of Norwich. Enquiring later of the District Medical Officer of Health, I was informed that the incriminated cows had been eliminated, also that the Mitford and Launditch Rural District Council had agreed that 'when the register of cow-keepers is complete, attention be given to tuberculosis in cows.' In the public interest there should be legal power to slaughter, or otherwise control, such animals, fair compensation to the owner of course being provided for. In view of a similar occurrence in another county, which led to questions being asked in the House of Commons, I ventured to write to the Local Government Board to point out that under existing lack of powers there was a danger of cows known to be suffering from tuberculous udders being sold without being subject to control, and hence perhaps extending their sphere of mischief.

"It is desirable that there should be legislation to secure the control of cows with tuberculous udders, especially in view of the findings of the present Royal Commission, as expressed in their Second Report issued in 1907. Such was, indeed, recommended by a former Commission in 1898. The Glanders and Farcy Order, 1907, made by the Board of Agriculture and Fisheries, indicates the nature of control needed apart from slaughter and compensation. In connection with tuberculous milk, the health and lives of human beings, and not merely those of stock, are imperilled by want of legislative control."

The Board of Agriculture issued at the end of May, 1909, an Order dealing with tuberculosis in cows, which had an important bearing as supplementary to the Milk and Dairies Bill, which was introduced by Mr. John Burns. The Order, which was to have come into operation on January 1st, 1910, applied to England, Wales, and Scotland, providing that any person having in his possession any cow apparently suffering from tuberculosis of the udder, etc., or emaciated from tuberculosis shall notify the fact to a constable or inspector of the local authority. Provision was also made for the inspection and slaughter of diseased animals, and the amount of compensation to be paid was set out. The Order further dealt with the precautions to be adopted with respect to milk produced by cows which were, or appeared to be, suffering from tuberculosis.

Owing to the rejection of the Milk and Dairies Bill, this Order unfortunately never came into force.

WATER SUPPLIES.

The sources of water supply in Norfolk are :—

(1) *The Rivers and Broads.*—The Wensum is tapped by the City of Norwich Water Works Company, which also supplies parts of Catton, Sprowston, Kirby Bedon, and Cringleford, in the Administrative County beyond the boundaries of the City of Norwich. The Bure is, or will be, utilised by the Great Yarmouth Water Works Company, which already supplies certain villages in the County on the line of the mains to Great Yarmouth from the Waterworks at Ormesby Broad. Sand filtration is adopted by both Water Companies after pumping, the Yarmouth Company indeed having double filtration. King's Lynn is supplied from the Gayton River. Many villagers on the banks of the Ouse and other rivers drink raw unfiltered river water.

(2) *Deep Wells in the Chalk.*—Cromer, Thetford, East Dereham, Swaffham, and North Walsham receive their water supplies from deep wells in the chalk which underlies the greater part of Norfolk. Overstrand, Felbrigg, East and West Runton, and part of Roughton are supplied from the Cromer Water Works.

(3) *Springs.*—Important supplies are obtained from springs at Sheringham, Hunstanton, and Marham, the Wisbech Water Works Company utilising the last-named springs, supplying en route Downham Market, the villages of Fincham, Bexwell, parts of Downham West, Wormegay, Watlington, St. Germans, and Magdalen in the Downham Rural District, and about half the Marshland Rural District. West Lynn Rural District Council are in treaty with this Company to supply that District with Marham water.

(4) *Shallow Wells.*—In the chalk, as at Wells-on-Sea; or in gravel, sand, or boulder clay, as in many villages throughout the County.

(5) *Rain Water*.—Collected in underground cisterns, as at West Lynn and par Marshland Rural Districts. During 1909 there was no shortage of rain-water supplies such as was painfully felt in 1908. (See Meteorological Notes.)

At *Hunstanton* an excellent supply is obtained from springs from the green sand formation. The site of these springs might well be made more private, so that no unauthorised person could possibly gain access to it. The Medical Officer of Health asks permission of the Urban District Council to have the water analysed again. Periodical bacteriological analyses of water supplies are a great safeguard against unsuspected sources of pollution. Dr. Sumpter draws attention once more to the advisability of acquiring a field abutting on the Waterworks to the East, which is at present under cultivation.

In October, 1909, a Conference between the Urban District Council of New Hunstanton and the Rural District Council of Docking was arranged, and attended by Major Morton, R.E., an Inspector of the Local Government Board, in reference to the water supply of Heacham by extension of the Hunstanton mains. The two Councils generally agreed to the terms of the suggestions made by the Board's Inspector.

At *East Dereham*, Waterworks were erected in 1881, the supply being derived from a deep well, sunk at a cost of £4000. After pumping, the hard chalk water is subjected to a softening process before distribution.

At *Sheringham*, water is derived from (a) two sets of springs, and filtered through coarse gravel prior to entering the reservoirs, whence they pass by gravitation to the town; (b) from a deep tube well, whence it is pumped to a reservoir at a higher level, for the supply of the high-lying parts of the town. As at Hunstanton, the quantity of water issuing from the springs is affected by excessive rain or drought; and again, as at Hunstanton, a cultivated field adjoining some of the springs should, I think, be acquired by the Water Works Company and put out of cultivation.

At *Diss* the Urban District Council adopted a scheme proposed by the Engineers they consulted for a deep-well supply, but the Local Government Board, after inquiry, raised an objection to the proposed site of the well, and matters are therefore again at a standstill. No particulars as to the proposed scheme are given in the District Medical Officer's Annual Report.

The Rural District Council of *St. Faith's* employed a firm of Consulting Engineers who submitted a scheme for providing pure water to the village of Lenwade, which had been the subject of a special Report of the M.O.H. Dr. Long reports that the initial cost and estimated working expenses "make it quite impracticable for the Council to adopt it," but particulars as to the scheme and cost are not given in the Annual Report.

References to the water supply of each Sanitary District are given in the summaries of the Reports of the District Medical Officers, but I here reproduce in fuller detail the remarks in two of the Districts Reports.

Downham R.D..—"In the upland portion of the District the character of the water supply varies. Towards the extreme East, where the subsoil is chalk, there is a plentiful supply of good wholesome water. At Marham the Wisbech Water Works Company have constructed their reservoir and powerful pumping apparatus. There are two mains running somewhat elliptically through the centre of the District and eventually joining at Wisbech. En route they now supply (1) the villages of Fincham, Bexwell, parts of Downham West, (2) Wormegay, Watlington, St. Germans, and Magdalen.

"Towards the centre of the District the water supply, although abundant, is more unsatisfactory, the wells being shallow and, therefore, liable to surface pollution. In my last Annual Report I drew your attention to the unsatisfactory condition of the water supply at Wimbotsham. In March a Parish Meeting was held, at which I was present, and it was almost unanimously decided to take steps to have the Marham water. In a very short time, owing to the energetic action of those interested, the main from Downham was brought to the village, and 90 houses in the village have the water laid on.

"In the Fen district the supply is rain water collected in underground cisterns or tanks—except where the Marham water is available. I wish to remind you of the advisability of getting the Marham water carried from Magdalen through Stow Bridge to the end of Barroway Drove. The inhabitants concerned are unanimous in their wish that this should be done. Negotiations were last year opened with the Wisbech Water Works Company, but

unfortunately fell through. I do hope, however, that the matter will not be allowed to drop, and that you will, as soon as possible, re-open negotiations, and that the distress which has so often occurred in this district during a drought will not recur."

Mitford and Launditch.—"Lyng is one of the places where I think it will be necessary in future years to provide a pure water supply from the surrounding hills. I have examined the water from many of the wells, and found in several cases that the supply was distinctly polluted; this was specially noticeable in one well near the school, where the water was pumped out and the well cleaned with not the slightest benefit. It is obvious that there is an underground stream flowing from the hills to the river, so that there is good water to be obtained, unless a cesspool or privy vault should leak into the surrounding soil, when any well on the river side would of necessity be polluted.

"In many of our villages the water supply question is likely to become more urgent; for, as I have pointed out in my previous reports, the water is in nearly all parts derived from surface wells, so that the continued pollution by vaults must have a pernicious effect. To counteract this we have had the pail type of closet introduced very largely—this is very beneficial in the open country parts of our district, where they can be emptied on the gardens, but in certain villages this is not possible—Litcham is an example. Shipdham is another village where the garden space is not sufficient, and where a scavenging scheme will have to be considered.

"The Inspector has devoted a large amount of his time during the past year to improving the sanitary surroundings of cottages, but it is obvious that it is no use having suitable traps to the sink drains and properly-constructed closets if the soil in the neighbourhood of the wells is to be polluted."

SEWERAGE AND DRAINAGE.

The following Urban Districts in the Administrative County have sewerage systems more or less on modern lines of sanitary engineering:—Diss, Cromer, Sheringham, East Dereham, King's Lynn M.B., Swaffham, New Hunstanton, Walsoken.

Thetford Borough, Wells, and Downham Market have sewers for surface and slop waters, but into which no doubt a few water closets or overflows from cesspools find their way. The drainage of North Walsham for surface and slop waters is by open channels.

Very few water closets are at present connected with the Diss sewer, owing to lack of water. In the event of the town receiving a public water supply and a larger number of houses being provided with water closets draining to the sewage farm of five acres of sandy soil, it will be interesting to note whether the effluent will be equally satisfactory as at present. At Cromer and Hunstanton the sewage is received into settling tanks before it is discharged into the sea. At Sheringham a septic tank was tried at one time, but is now abandoned. At Swaffham the separate system is in vogue, the surface water sewers draining into ponds, while the sewage proper is carried to a sewage farm two miles from the town, where, after precipitation by means of aluminoferric, the effluent flows on to the land on which lucerne and mangold are grown. Since the chalk formation is quite near the surface at this spot, it is not to be wondered at that the effluent disappears on the farm.

At East Dereham experimental work with slate beds, circular percolating filters, and contact beds, has been in progress with a view to lessening the pollution of the stream (a secondary tributary of the Wensum) into which the effluent is discharged. At Downham Market a Local Government Board Inquiry will shortly be made into a new sewerage scheme which has been prepared for the District Council, and which involves pumping prior to bacterial treatment. At Walsoken and King's Lynn, when the sewerage systems were laid down, difficulty was experienced in laying the sewers at a self-cleansing gradient.

No progress is reported as to any scheme for the treatment of Fakenham sewage in the Walsingham District, but the Melton Sewerage Works are reported to have been in good working order. In the Rural Districts some of the more populous villages have had drains, originally laid for the carriage of surface water, made to serve as sewers. At Attleborough and Watton, in the Wayland R.D., some water closets are connected with the sewers, and an attempt has been made to keep back solid matter by tanks and gravel filters. A similar device is being attempted at Thetford Borough; but unless such works are carried out under

the advice and supervision of a skilled Sanitary Engineer, it is a matter for serious consideration whether they will not become a source of trouble and nuisance in the event of houses having their privies converted into water closets and connected up with the existing sewers, thus changing the character of the sewage to be dealt with. I propose to enquire further into these arrangements. In some coast and inland populous villages sewers have been laid, in the former cases the outfalls being into the sea, in the latter cases generally carried into ditches in non-populous parts, but without any attempt at treatment other than perhaps, in a few instances, settling in a large cesspool or septic tank. In many villages there are no sewers.

The Summaries of the Reports of the District Medical Officers of Health contain a reference to the sewerage and drainage of each District as a whole, but the following extracts should be quoted in full:—

East Dereham.—Dr. Belding writes: “In my Report for 1907 I gave an account of the proposed sewage works as suggested by Mr. Dibden. We have now a year’s experience of their working, and the results are sufficiently satisfactory to justify our continuing to work on somewhat similar lines.

“The works proved ample for the normal Summer flow of even such a wet Summer as 1909, and the effluent was reasonably good, as good in fact as I expect from double contact; for we have to consider the result of any system, not from what can be done under ideal conditions and conducted by experts as a laboratory experiment, but what actually occurs when the works have been put to the test of a year’s working by ordinary labour.

“Before proceeding further, it would be as well to reconsider the conditions affecting the sewage before treatment:—

“1st.—Our sewers have in many places very little fall—this is specially noticeable for the last few hundred yards before the outlet; the result of this is that the least subsidence of the sewer means that that part is never emptied and solid matter there accumulates until a heavy rain occurs.

“2nd.—A very large proportion of rain water is taken by the sewers. We have separate systems for parts of the town, but in many of the yards there is a slop gully for the use of the surrounding cottages, and, of course, the roof water, &c., must be dealt with by the sewers, the separate system only taking street water.

“3rd.—We have large maltings in the town and they suddenly discharge large quantities of steep water, which is a sewage that requires very efficient treatment.

“The result of these conditions is that although we can deal with our normal flow, up to a certain point, yet the rush of sewage at certain times is enormously greater than we can cope with.

“To effectively treat this large extra flow we should have to increase our works to six times the present size; for although it might appear that during a heavy rain there would be only water or very dilute sewage coming down, such is not the case, for, as I have pointed out, many parts get flushed then and bring down accumulated sewage, and it is always possible that a malting or two may empty their tanks at that time, so no scheme can be efficient that does not treat the whole of our storm water.

“As the result of our experience and the reports of working in other places, I have come to the conclusion that double contact will not, under working conditions, give a sufficiently good effluent for turning into a stream, but that it is necessary to adopt triple contact.

“The great difficulty about this in our case is the small amount of fall we have between the sewer outfall and the stream, viz., six feet, so that as each bed is now three feet in depth it would be necessary to pump if the sewage is to be carried to a third filter bed. All this means a very expensive scheme, viz., works six times the size of our present ones, with an engine and pump to raise the sewage to new tertiary filters.

“But supposing we do not consider the financial aspect of the case, there is another very important one. If our works are large enough to deal with our maximum flow it is obvious that in dry weather in Summer we should only require one-sixth of the plant; now, the whole process depends on the activity of the bacteria in the various beds, so that in Summer-time we should not be able to keep the beds in a healthy condition, and when a rush came in Autumn the sewage for a time would not be properly treated.

“ This rush of sewage is only for a short time, so that if we could take it as the works require it, then—by working night and day—we could almost deal with the total quantity by our present plant. So the problems we have to consider are:—

“ 1st.—The absolute necessity of pumping under any scheme if we are to have triple contact and efficient treatment of the sewage, and

“ 2nd.—The very irregular flow.

“ I should propose to deal with the question as follows:—

“ Construct a tank at the far end of the first part of the sewage farm capable of holding 240,000 gallons—this would be roughly 100 feet long, 50 feet wide, and 8 feet deep, and would leave a wall of earth 50 feet thick between it and the stream; if the walls are sloped and cased with a thin layer of concrete it would not be very expensive to construct.

“ This tank would serve two very useful purposes—(a) as a reservoir enabling us to use the sewage as required, and (b) as a rough precipitation tank, so that the sewage would be easier to deal with; it would not act as a septic tank, so would not affect the future processes.

“ From this tank conduct the sewage by underground pipe to pump driven by oil engine, which would raise it to new primary contact beds constructed above the ground level; this would be in some ways better than pumping at the tank, for then the sewage would have to be carried in pipe four feet above ground level.

“ These new tanks would be filled with the slates from the present primary tanks, and if larger tanks are made I should like to return to the large coke for the extra area. The sewage from these would go to the present primary tanks filled with medium coke, or coke and coarse shingle, and after passing through this would be in a fit state to treat in the fine contact beds or the circular filter. The effluent from the slate beds is not always good enough for a fine contact bed.

“ The advantages of this scheme would be:—

“ 1st.—Efficient treatment.

“ 2nd.—Small capital outlay.

“ 3rd.—Reasonable working expenses.”

RIVER POLLUTION.

Matters remain the same, as regards the pollution of the Wensum, at *Fakenham*, owing to great objection having been taken to the proposed site of the sewage farm in Mr. E. J. Silcock's scheme of treatment. Negotiations were later made for the purchase of fifteen acres of land on a site within the parish boundaries for the purposes of a sewage farm, but I have not heard of any further progress towards the lessening of pollution that exists in the river here.

At *Dereham*, which discharges an effluent after treatment into a sub-tributary of the Wensum, serious consideration is being given to enlarging the works and subjecting the sewage to further treatment so as to improve the effluent, and to deal in some degree with the storm water and the unequal character of the sewage. (See Section on Sewerage and Drainage.)

At *Downham Market* the Urban District Council have adopted a new scheme, which involves pumping, for bacterial purification of the District's sewage, and have applied to the Local Government Board for sanction to a loan of £5,230. At present the St. John's Eau is polluted by the town's untreated sewage. Representations were made to the Urban District Council in 1906 by the Norfolk County Council and also by the Stoke Ferry Drainage Commissioners, and a little later the Local Government Board enquired as to what steps were being taken to remedy the conditions reported on by the Downham Council's Medical Officer of Health. The Urban District Council consulted a firm of Engineers (Messrs. Brown and Elliott) and adopted a scheme. A Local Government Board Inquiry was held in April, 1909, with respect to an application for a loan of £3,600 in connection with the proposed sewage scheme. I attended the Inquiry as County Medical Officer to note proceedings. The Board, in May, 1909, refused to sanction the loan on the grounds that the proposed site was too near to inhabited houses and that the proposed site of the filters would be liable at times to be submerged, and further suggested that a pumping scheme seemed necessary, as a gravitation scheme seemed to be impossible with self-cleansing gradients.

The Downham Rural District Council during the year protested against the pollution of the Ouse at Littleport in the Isle of Ely, and the sanitary administration of the Rural District Council of Ely has since become a matter of investigation by the Local Government Board.

Complaint was made to me by the Inspector of the Yarmouth Water Works Company, in 1909, as to the pollution of the Bure at Coltishall, Horning Street, Wroxham, and Hoveton. The Medical Officer of Health of the Rural District was communicated with and the following reference to the matter appears in his Annual Report:—

“The pollution of the Bure as it passes through Coltishall was carefully enquired into; 15 direct sources and 30 indirect sources of pollution were discovered. Many of them were comparatively trivial, but some instances of grave pollution from overflowing cesspools and from a slaughterhouse were noted.”

In the *Downham R.D.*—“A sudden pollution of the Wissey was found to be due to the discharge of chemicals from a factory outside the District. Precautions have been taken to prevent recurrence. The river Ouse is polluted by the Littleport sewage at the Ten Mile Bank.” The District Council was in negotiation with the Ely Rural District Council at the date of the M.O.H.’s Report.

At *Thetford* a new sewer is being laid to serve the Pike Lane area. The house drains are to be connected, and the outfalls into the river are to be provided with filters. If much solid matter gets into this sewer these small filters will probably become blocked, and in any case cannot discharge an innocuous effluent into the river. It is, however, fortunate that for a considerable distance below Thetford the river runs through a very sparsely-populated district.

ISOLATION HOSPITAL ACCOMMODATION.

I reported on this subject fairly fully last year. No further accommodation was provided in any District during the year 1909. Some of the District Medical Officers of Health advocate hospital provision without indicating precisely the necessary details, others think the provision of an isolation hospital for a scattered Rural District to be impracticable.

Many of the histories given in the Reports indicate clearly that secondary cases do frequently arise through want of isolation accommodation, but on the whole the incidence of notifiable infectious diseases during 1909 was comparatively slight.

In these days of motors and rapid means of transit it might be well worth consideration whether in a county like Norfolk, which is practically without hospital accommodation for cases of Scarlet Fever, Diphtheria, and Typhoid Fever, two or three large fever hospitals, well built and under the supervision of a resident medical superintendent, might not meet the needs of the whole county. A motor ambulance could easily carry an infective patient ten miles or more in less than an hour. A joint hospital could serve several sanitary districts in this way.

It is in the power of the County Council to see that the whole of the County is provided with proper isolation hospital accommodation, and the County Council may contribute to the expenses of such hospitals. The question needs very careful consideration.

The following few extracts are from some of the Reports of the District Medical Officers of Health who refer to the question of hospital isolation accommodation:—

Rural Districts.

Aylsham.—“The Isolation Hospital near Aylsham, with accommodation for three patients and a nurse, has been maintained in a proper state of repair, and is available should it be required. Circumstances, however, have not arisen during the past year to warrant it being opened for the reception of patients. Infectious diseases in the District were limited to Scarlet Fever and Diphtheria. To have dealt effectually with either of the two outbreaks of Diphtheria, described above, would have necessitated the use of a hospital of considerable size, and to have opened one with only three beds would have been a useless expenditure of money. The spread of Scarlet Fever was very successfully limited without recourse to other than home isolation.”

Blofeld.—"This subject was very fully considered in my Annual Report for 1908, and the history of infectious disease in the District during the past year does not lead me to alter my views." In 1908 Dr. Back wrote—"The population of the District is very scattered, and in many instances the cottage in which the patient is living forms a very fair hospital; but, nevertheless, cases occasionally do occur in the more crowded parts of villages where the convenience afforded by an isolation hospital would be welcome."

Docking.—"The necessity of providing an Isolation Hospital is undoubted. The form of Isolation Hospital and the position present many difficulties. I have studied the County M.O.H.'s Report containing the opinions of the different Rural District M.O.H.'s on this question, and make the two following suggestions to your Council for consideration:—

"1. To hire several cottages, one for different groups of villages on the outskirts of these villages, *e.g.*, one at Ingoldisthorpe for Snettisham, Dersingham, and Ingoldisthorpe. Put in a Caretaker, rent free, on condition that the cottage is kept in constant readiness and that the said Caretaker would undertake the nursing of any cases sent in, then receiving extra remuneration; personally I think it would be possible to find such Caretakers. This would overcome the difficulty of transport and the parents' objection to their children being moved a long way off.

"2. To purchase a portable dwelling to use when and where required for the healthy members of a family when it was impossible to isolate the case properly at home. A definite site would have to be arranged for each group of villages. By adoption of the Public Health Act Amendment Act, 1907, Section 65, Section 124 of the Public Health Act, 1875, becomes applicable to *all* cases of persons suffering from any dangerous infectious disease: that means that if the case cannot be properly isolated at home it can be compulsorily removed to the Isolation Hospital."

Urban Districts.

Cromer.—"The Isolation Hospital acted satisfactorily."

Hunstanton.—"At one time the Isolation Hospital was quite full, and in view of further accommodation being necessary your Council purchased a temporary building. Fortunately it was not required. I advise your Council to perfect their present hospital by adding a discharging ward and a bathroom. Both of these are very necessary, and it is a great credit to the present Caretaker that she has managed so well without them."

Walsoken.—"Seven of the 20 notified cases were removed to the Isolation Hospital."

Port of King's Lynn.—"The Port Isolation Hospital is in good order and ready for any emergencies."

Port of Wisbech.—"We have at intervals inspected the Port Isolation Hospital, Wingland, and have found it in good condition, aired and ventilated, ready for immediate use."

ADMINISTRATION OF MIDWIVES ACT, 1902.

[Section 7 (b) of *The County Medical Officers of Health (Duties) Order, 1910*, requires that the Annual Report of the County Medical Officer shall contain a section on the administration within the County of the Midwives Act, 1902.]

In April, 1905, the Norfolk County Council appointed a Lady Inspector of Midwives, but did not adopt the suggestion incorporated in the "Suggestions to County and County Borough Councils issued by the Central Midwives' Board in reference to the duties assigned to them under the Midwives Act, 1902" (Suggestion No. 3)—"It is further suggested that supervision should be regarded as at least in part a medical duty, and that the Medical Officer of Health or the Medical Adviser specially appointed should be empowered to act as the Executive Officer of the Committee." It was not until 1908 that a Medical Officer of Health for the County was appointed, and his duties in this direction are thus defined—"to assist and advise, upon request, the Lady Inspector of Midwives in the discharge of her duties, and, upon request, to advise the Sanitary Committee thereon."

The Inspector of Midwives visits and inspects the Midwives in the County, issues cautions, receives notifications of sending for medical help, of still births, etc., suspends Midwives from practice for a time if in attendance upon a case of Puerperal Fever, keeps and submits to the Central Midwives' Board the annual list of the names and addresses of Midwives practising in the County, and reports quarterly to the Committee, which acts as the Local Supervising Authority. I would suggest that in future the Inspector of Midwives should also submit an Annual Report for the calendar year ending December 31st, incorporating in tabular form the information necessary to be incorporated in the County Medical Officer's Annual Report, as required by the County Medical Officers of Health (Duties) Order, 1910.

This should show the number and distribution over the administrative area of the Midwives in the County Register, and it would be convenient to analyse the distribution according to the various Union or Sanitary Districts. The report should also indicate whether all the Midwives keep case books or registers, and whether they are fairly well kept. If there are any Midwives who cannot write, it should be stated how their case books or registers are kept. The tabular statement should indicate

- (a) The total number of cases attended by registered Midwives during the calendar year.
- (b) The number of records of sending for " medical help " received.
- (c) The number of deaths (if any) of mothers which have occurred before the attendance of a Medical Practitioner has been notified by Midwives.
- (d) The number of deaths of infants under like conditions.
- (e) The number of still births notified by Midwives.
- (f) The number of cases of Puerperal Fever known to have arisen in cases attended by registered Midwives.
- (g) Whether or not facilities are afforded in the various Sanitary Districts for the disinfection of Midwives who have been attending cases of Puerperal Fever, etc.
- (h) The number of instances in which the conduct of a Midwife has been reported to the Supervising Authority and made the subject of special inquiry.
- (i) The number of Midwives suspended from practice.

Further notes as to cleanliness of the appliances, etc., required in the Rules of the Central Board, and as to the sanitary conditions of the Midwives' houses or lodgings, as to whether pulse and temperature are systematically taken and recorded, and any other brief general remarks with reference to Midwives, would complete a fairly full record of the administration of the Act for incorporation in future Reports of the County Medical Officer of Health.

ADMINISTRATIVE CONTROL OF OPHTHALMIA NEONATORUM.

In September, 1909, I reported to the Committee on this important subject, this disease being the cause of a very large percentage of existing cases of permanent blindness. Inasmuch as were adequate machinery to be provided, the majority of these cases of permanent blindness now due to Ophthalmia Neonatorum would be *prevented*, the subject could be briefly discussed from two points of view:—

- (a) *The Humanitarian.*—This cannot require much insistence upon in Christendom.
- (b) *The Economic.*—The compulsory education of blind children under the Elementary Education (Blind and Deaf Children) Act necessitates an expenditure roughly equivalent to the cost of educating fifteen normal children. I believe that the cost of educating a blind child amounts approximately to £500.

In this County, where a very large percentage of births are attended by Midwives, it appears to be extremely desirable that the Notification of Births Act, 1907, should be adopted by the various District Sanitary Authorities, or by the County Council, provided that arrange-

ments are first made to ensure that the Medical Officer of Health receives very early information. and that, secondly, arrangements have been previously made whereby every notified case of Ophthalmia, or other urgent malady, can at once receive medical treatment, the cost being defrayed, if necessary, by the Authority, who will have previously arranged a scale of payment with the medical men practising in their District.

Where the home conditions are very bad and the parents poverty-stricken, the work-house infirmary might, or rather, should receive the infant, where also skilled nursing (which is essential) could be provided. When Ophthalmia cases are taken early, proper treatment usually ensures speedy cure, and probably the cases could be dealt with at an average cost of under £5 per case, including medical treatment and nursing. An important administrative measure, for which the District Medical Officer of Health would be responsible, would be to prevent infection of others from the new-born infant.

Every Midwife should at once notify the District Medical Officer of Health, as well as the supervising Authority, of any case of inflammation of the eyes in a new-born infant. Every such case is certainly one which should be at once recognised as urgent, and medical help should be sent for. The Notification of Births Act can only be adopted with the consent of the Local Government Board, who would not be satisfied with anything less than some definite arrangements for the visitation of mothers and infants, for the purpose of giving definite guidance, where necessary, in feeding, hygiene, etc.

SUMMARY OF SANITARY WORK CARRIED OUT BY THE INSPECTORS.

I am indebted to the majority of the Inspectors for a tabular statement of the sanitary work done in their respective districts, but since no returns have come from three Rural Districts, the Summary for the County is incomplete. A study of the returns shows that active vigilance is exercised in some Rural Districts, among which those in North-West Norfolk appear to merit the palm, but it is difficult to appraise the work of Sanitary Inspection from mere statistical returns. A copy of the Special Table issued by the Home Office for a statistical return of the Administration of the Factory and Workshop Act, 1901, is not appended to many of the Annual Reports of the District Medical Officers of Health. It may be as well, therefore, to quote as a reminder Section 132 of the Factory and Workshop Act, 1901, which requires that—

“ The Medical Officer of Health of every District Council shall, in his Annual Report to them, report specifically on the administration of this Act in workshops and workplaces.”

The Medical Officer of Health is of course required to report on the administration of this Act only in so far as this administration is in the hands of the District Council and is concerned with matters in his department. The Report should state what action has been taken to remedy any defective conditions in the way of want of cleanliness, or ventilation, or drainage of floors, or other nuisances, and should give the standard of sufficiency and suitability adopted locally; while the sanitary condition of all bakehouses should form the subject of exact comment. (*Vide* L.G.B. Memorandum as to Annual Reports of Medical Officers of Health.) This information, being a part of the Annual Report, should of course be included in the copy sent to the County Council.

SUMMARY OF SANITARY WORK DONE IN THE URBAN DISTRICTS, 1909.

URBAN SANITARY DISTRICTS.	Population.	Complaints Received.	Nuisances Detected without Complaint.	Nuisances Abated.	Notices Served.	Summonses Taken Out.	Convictions.	Cottages Inspected.	Lodging-houses Inspected.	Slaughter-houses Inspected.	Bakehouses Inspected.	Dairies and Milk-shops Inspected.	Cowsheds Inspected.	Workshops Inspected.	Filthy Houses Cleansed (Sec. 46, P.H.A., 1875).	Houses Disinfected.	Overcrowding Abated.	Houses placed in Habitable Repair.	Houses Closed.	Houses Erected or Rebuilt for which Water Certificate sought.	"Certificates" Granted.	"Certificates" Deferred.	Wells Sunk or Improved Supplies of Water.	Wells Cleansed or Repaired.	Wells Closed.	Houses connected with Sewers.	Houses connected with Water Mains.	Earth, Pail, or Improved Privies Constructed or existing Privies Altered.	Privies and W.C.'s Repaired.	W.C.'s supplied with Water.	Cisterns Cleansed, Repaired or Covered.	Animals improperly kept removed.	Samples of Water taken for Analysis.	Compensation Paid for Destruction of Infected Redding.	Seizure of Unsound Meat.	Canal Boats Inspected.					
Cromer ..	4175	45	119	159	7	2	2	329	..	..	6	4	1	35	..	55	6	..	..	3	3	..	1	..	1	3	4	..	..	..	..	..	..	..	..	..	..	..
Dereham ..	5545	..	17	17	15	..	..	106	..	7	7	4	7	13	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Downham Market ..	2500	25	104	129	5	..	..	All	..	12	10	5	..	28	3	8	1	..	..	8	..	..	..	2	..	8	95	6	36	1	9	30	1	..	..	..	..	..
Diss ..	3800	27	15	42	..	..	..	71	..	4	7	6	6	20	2	6	2	3	..	6	..	..	..	..	..	6	..	2	16	..	1	..	..	..	..	..	..	..	..
Hunstanton, New ..	1893	5	9	14	7	420	8	22	2	63	..	37	58	3	10	..	45	..	2	5	3	
Sheringham ..	4000	..	..	14	2	..	..	50	1	..	5	6	1	57	..	3	1	2	1	..	..	..	3	..	..	..	..	2	3	24	..	..	5	..	..	1	..	..	..
Swaffham ..	3373	7	53	60	45	500	..	5	8	7	7	26	2	44	3	2	1	2	3	..	2	2	..	1	
Walsham, North ..	4100	650	3	8	7	5	..	39	6	6	1	..	6	8
Walsoken ..	3624	5	24	29	29	250	..	4	5	4	4	6	..	10	2	734	778	758
Wells-next-the-Sea & Port	2491	12	5	5	9	4	..	7	..	3	1	2
Thetford M. B. ..	4613	17	93	102	2	1	7	7	3	6	25	..	14	2	..	5	11	4	2	3	13½	..	3
King's Lynn M. B. ..	20288	78	340	391	391	3	3	842	25	16	29	48	16	372	6	61	11	12	15	29	17	..	22	47

SUMMARY OF SANITARY WORK DONE IN THE RURAL DISTRICTS, 1909.

RURAL SANITARY DISTRICTS.	Population.	Complaints Received.	Nuisances detected without Complaint	Nuisances Abated.	Notices Served.	Summonses Taken Out.	Convictions.	Cottages Inspected.	Lodging-houses Inspected.	Slaughter-houses Inspected.	Bakehouses Inspected.	Dairies and Milk-shops Inspected.	Cowsheds Inspected.	Workshops Inspected.	Filthy Houses Cleaned (Sec. 46, P. II. A., 1875).	Houses Disinfected.	Overcrowding Abated.	Houses placed in Habitable Repair.	Houses Closed.	Houses Erected or Rebuilt for which Water Certificate sought.	"Certificates" Granted.	"Certificates" Deferred.	Wells Sunk or Improved Supplies of Water.	Wells Cleansed or Repaired.	Wells Closed.	Houses connected with Sewers.	Houses connected with Water Mains.	Earth, Pail, or Improved Privies Constructed or existing Privies Altered.	Privies and W.C.'s Repaired.	W.C.'s supplied with Water.	Cisterns Cleansed, Repaired or Covered.	Animals improperly kept removed.	Samples of Water taken for Analysis.	Compensation Paid for Destruction of Infected Bedding.	Seizure of Unsound Meat.	Canal Boats Inspected.		
Aylsham ..	No	Re tur n	88	93	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Blofield ..	10688	10	83	88	93	155	..	3	1	..	3	2	..	30	..	2	2	4	48	14
Depwade Western Dist.	9670	10	106	105	63	..	..	750	..	5	6	3	10	16	..	23	3	4	1	3	3	..	4	..	..	..	..	21	28	..	..	..	..	..	..	..	..
Docking ..	15741	43	398	437	136	3	3	3208	..	163	283	121	40	513	2	40	3	5	4	34	34	..	6	8	1	9	..	26	41	..	..	..	2	Not stated	..	..	..
Downham (8 months)	15000	49	101	110	156	..	..	307	..	9	15	9	16	20	4	23	3	..	1	13	11	2	2	7	1	3	95	10	8	..	..	3	18	..	..	18	
Erpingham ..	No	Re tur n	n	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Flegg, E. and W.	9191	..	190	190	88	1	1	155	..	12	10	130	32	..	..	6	2	..	..	..	..	..	17	2	2	21	15	19	71	..	..	..	2	37	..	..	..
Forehoe ..	11329	3	139	139	15	..	..	457	..	28	..	180	364	..	1	21	5	..	..	17	..	..	..	7	1	..	..	38	..	..	..	..	..	12	..	..	..
Henstead ..	10358	3	125	113	78	..	..	381	..	10	8	47	51	..	1	50	1	3	..	7	5	..	9	9	2	..	3	30	16	..	12	1	15	1	..	..	..
Loddon and Clavering	11993	11	..	..	224	..	..	297	..	5	..	..	..	..	5	..	1	25	..	..	..	..	1	4	..	..	..	124	22	..	..	..	..	..	..	..	..
West Lynn ..	632	5	15	20	..	..	..	7	..	..	1	3	2	..	..	1	..	5	..	..	..	..	..	..	..	4	4	..	6	4	..	3	..	..	..	..	..
Freebridge Lynn ..	11847	58	817	864	715	..	..	472	4	183	88	103	226	204	12	26	16	121	5	18	18	..	54	17	3	6	11	51	22	9	6	11	5	..	4	..	..
Marshland ..	No	Re tur n	n
Mitford and Launditch	23982	..	110	97	67	1	1	420	..	22	20	75	75	59	..	30	2	7	6	1	5	10	3	62
St. Faith's ..	11075	14	390	404	76	1	1	179	..	7	8	19	58	27	8	31	6	9	..	7	6	1	6	14	2	..	3	25	39	2	210	4	7	..	..	16	
Smallburgh ..	13325	15	..	87	56	..	..	872	1	14	10	12	16	43	3	9	..	5	..	7	6	1	5	6	2	..	..	50	..	..	2	7	18	..	..	..	..
Swaffham ..	7644	15	105	110	119	..	..	380	..	82	8	106	22	22	10	38	5	40	4	2	1	..	8	13	..	..	..	12	42	..	..	..	..	11	..	..	..
Thetford ..	9950	4	183	160	34	2	2	952	..	7	8	28	34	46	..	8	1	4	..	5	5	..	5	8	9	6	8	100	94
Walsingham ..	17500	28	497	385	192	..	..	327	..	12	32	38	35	135	10	65	7	24	..	24	24	..	20	10	2	70	..	45	14	8	2	5	28	34	..	..	..
Wayland ..	13793	26	117	132	84	1	1	200	..	14	18	16	20	16	4	15	2	5	1	13	13	..	2	5	..	9	..	3	5	2	18	3	6	..	..	..	..

Some of the Inspectors have evidently returned the number of individual slaughter-houses, cottages, etc., inspected; others the total number of inspections and re-inspections.

ADMINISTRATION OF FACTORY AND
Rural

	Aylsham,	Blofield.	Depwade.	Docking.	Downham.	Erpingham.	Flegg E. & W.	Forehoe.	Henstead.	Loddon and Clavering.
1. Number of Inspections—										
Factories (including Factory Laundries)	1	2			1			90		
Workshops (including Workshop Laundries) ..	18	8		513	35	12	42	274	51	
Workplaces										
Homeworkers' Premises					5	96				
Total	19	10		513	41	108	42	364	51	
2. Defects found—(<i>Nuisances under the Public Health Acts</i>)*										
Want of Cleanliness	3			12		13			4	
Want of Ventilation					1		1			
Overcrowding	1						1			
Want of Drainage of Floors										
Other Nuisances				1	2	1				
Sanitary Accommodation { Insufficient		1								
{ Unsuitable or Defective							2			
{ Not separate for Sexes										
(<i>Offences under the Factory and Workshop Act</i>)										
Illegal Occupation of Underground Bakehouses (S. 101)										
Breach of Special Sanitary Requirements for Bakehouses (Ss. 97-100)										
Failure as regards List of Outworkers (S. 107) ..										
Giving out Work to be done { Unwholesome (S. 108) ..										
in Premises which are { Infected (S. 110) ..										
Allowing Wearing Apparel to be made in Premises infected by Scarlet Fever or Small Pox (S. 109) .			No Return							No Return
Other Offences										
Total	4	1		13	3	14	4		4	
3. Failure to affix Abs. of the Factory & Workshop Act (S.133)									4	
Action taken in matters { Not by H.M.I.				4						
referred by H.M.I. { Report sent to H.M.I.				4						
4. No. of Workshop Bakehouses	26			45	23		5		8	
No. of Underground Bakehouses in use										
5. List of Outworkers received from Employers in District ..										
No. of Outworkers on above Lists										
Addresses of { Forwarded to other Authorities										
Outworkers { Received from other Authorities					2					
6. Homework in Unwholesome or Infectious Premises—										
Notices prohibiting Homework in Unwholesome Premises (S. 108)										
Cases of Infec. Disease notified in Homeworkers' Premises										
Orders prohibiting Homework in Infect. Premises (S. 110)										
7. Workshops on Register (S. 131) at the end of the Year ..	66	26		145	63		52	68	51	

* Including those specified in Sections 2, 3, 7, and 8 of the Factory

WORKSHOP ACT, 1901, FOR THE YEAR 1909.

Districts.										Urban Districts.											
West Lynn.	Freebridge Lynn.	Marshland.	Mitford and Launditch.	St. Faith's.	Smallburgh.	Swaffham.	Thetford.	Walsingham.	Wayland.	Cromer.	Dereham.	Downham Market.	Diss.	New Hunstanton.	Sheringham.	Swaffham.	North Walsham.	Walsoken.	Wells.	King's Lynn M.B.	Thetford M.B.
	22	17			6			10		8		Periodical Inspect's.	1			26	11		10	52	
	168	75	69		33	54		98	60		37		20	71			39		3	372	48
	14				4			92		3	11										166
	6																				
	210	92	69		43	54	75	200	60		48		21	71		26	50		13	590	48
No Workshops or Factories in this District	16		15		3	2		10	18				2			1	1			19	
	3		1			1		1	1	1						1				1	
	1		2			1		1									1			12	
	1				1	1		1				2									
	19							30	4			1	1								
	5 2 1		1							2	1						1			1 4	
	48		19		4	5		43	23		1		5	1		2	3			37	
	6 6					9					2 2	1		1		2 2	3 3				
	23	14	17	8		7		33			8			3						29	6
	2							6				2								15	
																				2	

and Workshop Act as remediable under the Public Health Acts.

METEOROLOGICAL NOTES FOR 1909,

Founded largely on observations recorded by Mr. A. W. Preston, F.R.Met.Soc., at Norwich.

The mean temperature of the air during 1909 was one degree Fahrenheit below the mean for the years 1901-1908. This was largely due to the ungenial Summer, the mean temperature of June, 1909, being 4.2 degrees below the average, constituting the coldest June since 1816. Although the mean temperature of July, 1909, exceeded that of June by 5½ degrees, yet on no day of the month did the thermometer reach even 75 degrees. In both months the days were relatively colder than the nights, owing to the great prevalence of cloud. In August a fortnight's spell of glorious weather was experienced between the 3rd and the 16th, when the thermometer exceeded 75 degrees on 9 days, and upwards of 80 degrees on three days. Otherwise the month was cold and unseasonable—the unseasonable weather being continued through September, the mean temperature of which was 2.6 degrees below the normal—the coldest September since 1894.

With October a remarkable change set in, the weather being unseasonably warm with a remarkable uniformity of day temperatures. The temperature exceeded 59 degrees on 21 days of the month. November was colder than usual with a mean temperature 2 degrees below the average.

January and February were dry months; while December was wet and stormy, remarkable for great and sudden changes of both pressure and temperature. On the 3rd the barometer fell to 28.36, the lowest reading recorded since 1886. It was the wettest December for at least forty years past. In March, which proved to be the most winterly month of the year, the mean pressure for the month (29.51 inches) appears to have been the lowest in this neighbourhood for over 60 years.

As regards rainfall, the number of days with rain during the year was 233 in Norwich, the largest number on Mr. Preston's records back to 1883. Between June 22nd and August 3rd, again between August 16th and September 19th, and again between September 24th and December 12th, there were never more than two days together without rain. The total rainfall for the year was 27.82 inches in Norwich, being 2 inches above the average; but this total amount was exceeded both in 1906 and 1903, when the totals equalled 28.54 and 29.44 respectively.

The accompanying Table of Rainfalls in different parts of the County shows the unequal falls in a large County like Norfolk. For the returns from Dunham I am indebted to Mr. A. G. Copeman. The late Mr. T. Cozens-Hardy courteously gave me monthly returns of the rainfall at Sprowston until his decease. I have completed the return from the Report of the Medical Officer of St. Faith's, which fortunately contained the information. For the other Districts noted I am indebted to the courtesy of the District Medical Officers of Health, who kindly give me monthly returns.

		Little Dunham.*	Freebridge Lynn.	Diss.	Aylsham.	Cromer.	Blofield.	Sprowston.†	Downham R.	Dereham.
January	..	0.89	0.97	0.6	0.90	0.57	0.54	0.65	.90	..
February	..	0.56	0.25	0.75	0.72	0.42	0.68	0.63	0.21	..
March	..	3.12	3.50	2.45	3.06	2.04	2.50	2.85	2.85	..
April	..	1.37	1.71	1.17	1.54	0.86	1.31	1.28	0.92	..
May	..	1.37	1.17	1.49	1.15	1.02	1.25	1.13	1.40	..
June	..	3.63	4.42	3.78	3.81	2.30	4.44	2.73	4.68	3.77
July	..	4.24	4.50	2.50	3.85	2.77	2.91	2.85	3.42	4.18
August	..	2.64	3.61	1.72	1.90	1.59	1.79	1.57	2.53	2.72
September	..	1.83	2.17	2.10	1.88	2.52	2.38	1.82	1.59	..
October (Great Dunham, 4.87)	..	4.32	3.56	3.72	4.49	3.79	3.39	3.72	3.60	4.53
November	..	1.10	0.90	1.51	1.60	1.25	1.28	1.36	.82	1.29
December (Smallburgh, 4.97)	..	4.13	3.89	4.37	4.97	4.65	4.91	4.43	4.69	..
Totals	..	29.20	30.65	26.16	29.87	23.78	26.41	25.02	27.61	..

* By the courtesy of Mr. A. G. Copeman. † By the courtesy of the late Mr. T. Cozens-Hardy in January and February. Otherwise I am indebted to the District Medical Officers of Health for the monthly returns of rainfall.

This completes my Report for the year 1909, except that I have prepared Summaries of the Reports of each District Medical Officer of Health, which, together with a large table of Vital Statistics and a table dealing with Notifiable Infectious Diseases, are appended.

J. T. C. NASH.

SUMMARIES OF REPORTS OF DISTRICT MEDICAL OFFICERS OF HEALTH.

I. URBAN DISTRICTS.

CROMER.

Medical Officer of Health, R. C. M. COLVIN-SMITH, M.B.

The Report is in Print.

[Dr. E. E. Legat, who was M.O.H. for the first nine months of the year, also contributes a Report covering that period.]

Area in Acres	1901 Census (exclusive of inland water)	..	1,007
Population	1901 Census	.. ..	3,781
Population	1909 Estimated	.. ..	4,175
Deaths registered in the District	.. ..	..	35
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	2
			10 years' mean. 1899—1908.
Nett Death Rate	.. ..	7.9	9.5
Zymotic	.. ..	..	..
Infantile Mortality	.. ..	43.7	114.9
Birth Rate	.. ..	21.7	21.4
Cases of Infectious Diseases per 1000 population			12.45

HOUSE ACCOMMODATION.—Dr Legat says: “One very bad case of overcrowding was the subject of a Police Court prosecution, and the offender was allowed three months to abate the nuisance. Not very promising for future action.”

Dr. Colvin-Smith made a house-to-house inspection of Suffield Park with the Sanitary Inspector, but no details of results given.

SEWERAGE AND DRAINAGE.—No note beyond that the man-holes in main sewers were inspected.

WATER SUPPLY.—The Water Works and Reservoir inspected with the County Medical Officer of Health (see page 51).

SUPERVISED PREMISES.—Bakeries, laundries, and workshops inspected. The floor of one bakehouse was found in a “filthy condition.” Dairies satisfactory. “In one cowshed ventilation was defective, manure allowed to accumulate, and the cows not clean.” No action reported.

SCHOOLS.—Dr. Colvin-Smith says: “I inspected the Council Schools and drew your attention to the defective ventilation in the cloak room, and the need for greater cleanliness.”

NUISANCES.—The following are commented on:—A filthy house in Suffield Park; several insanitary stables (one in West Street, in a confined yard, opened directly into a living room, and was closed); a stagnant and offensive pool in a yard, which was filled in.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—During the past year 51 of the 55 cases notified as Scarlet Fever were treated at the Isolation Hospital, the average duration of stay being 39 days. No less than 39 of these cases were admitted during the months of June, July, August, and September, thus illustrating the inestimable value of the Isolation Hospital during the Season. There was one death of a child aged $2\frac{1}{2}$ on the third day in the Hospital. The Isolation Hospital acted satisfactorily, and there was a heavy strain on it, as at one period there were no less than 23 cases under treatment—two tents in addition to the ordinary accommodation having to be erected.

In the last quarter, seven cases of Scarlet Fever were notified, and all removed to the Isolation Hospital; the bedding, &c., being removed to the Isolation Hospital for steam disinfection, and the rooms carefully disinfected with Formalin.

DEREHAM (EAST).

Medical Officer of Health, D. TURNER BELDING, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	5,299	
Population	1901 Census	.. ..	5,545	
Population	1909 Estimated	.. ..	5,545	
Deaths registered in the District	.. ..	85		
Corrections—Additions	.. ..	4		
Deductions	.. ..	0		
			10 years' mean.	
		1909.	1899—1908.	
Nett Death Rate	.. ..	16·05		
Zymotic	.. ..	·36		
Infantile Mortality	.. ..	117·1	129·00	
Birth Rate	.. ..	20·01	22·95	
Cases of Infectious Diseases per 1000 population		1·9	.	

DISTRICT.—The physical characteristics of the town and the waterworks were dealt with in my report for 1908.

The population was 5524 at the 1891 census and 5545 at 1901 census, and I do not consider it in any way decreasing.

SEWERAGE AND DRAINAGE.—[See under Section on Sewage Disposal p. 53].
A manhole was constructed on a long sewer in St. Nicholas Street.

SCAVENGING.—The number of Cleansings effected by the Scavengers during the past 12 months have been:—By Day Men, 23,275; By Night Men, 21,745; Total, 45,020. The number of instances in which the public had to give notice of cleansings required only amounted to $1\frac{1}{2}$ per cent. of the number of cleansings effected by Scavengers. This, I think, speaks well for the efficiency of the Pail and Dust Box System.

HOUSE REFUSE.—The old dustbins are gradually giving place to easily emptied movable receptacles.

WATER SUPPLY.—There is nothing fresh to add about the water supply of the town and district—the wet summer keeping the surface wells in good order.

SUPERVISED PREMISES.—Cowsheds, slaughterhouses, bake offices, workshops, and factories have all been inspected during the year and reported in a satisfactory condition.

SCHOOLS. }
BYE-LAWS. } No Report.

NUISANCES.—Inspections have been made of 106 properties during the year. Notices have been served or letters written to the persons concerned, and nuisances abated in cases of:—Defective drains 2, accumulation of manure 2, defective W.C's. 2, drains stopped 4, defective water supply 1, defective privy 1, prohibited trade 1, overcrowding 1, defective ash bins 3.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—In connection with the few cases of Infectious Diseases which we have had, the houses in which cases occurred have been inspected, disinfectants supplied, sanitary defects remedied, and the rooms occupied by patients disinfected after the convalescent stage had been reached.

DOWNHAM MARKET.

Medical Officer of Health, E. G. WALES, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	1,002	
Population	1901 Census	..	2,472	
Population	1909 Estimated	..	2,500	
1d. Rate produces	..	..	£35	
Deaths registered in the District	..	..	55	
Corrections—Additions	..	..	0	
	Deductions	..	13	
				10 years' mean.
		1909.		1899—1908.
Nett Death Rate	..	16·8		14·8
Zymotic „	..	·40		
Infantile Mortality	..	106·00		129·4
Birth Rate	..	18·8		22·1
Cases of Infectious Diseases per 1000 population				
(chiefly Scarlet Fever)	..	8·2		

DISTRICT.—*Physical Features*—Subsoil mainly sandstone in the upper part and clay in the lower. Natural drainage of the district is into St. John's Eau river at Western boundary.

CHIEF OCCUPATION OF INHABITANTS.—A Market Town.

HOUSE ACCOMMODATION.—On the whole adequate, but there is a demand for houses of a rather better class than the ordinary artisan dwelling. One case of overcrowding was dealt with.

SEWERAGE AND DRAINAGE.—A scheme for sewage treatment was the subject of a Local Inquiry held by the Local Government Board on April 16th. Much opposition, chiefly on account of the site, and it was not approved by the Local Government Board. Another and more comprehensive scheme, necessitating pumping of the sewage, has been prepared, and after decision as to site of pumping stations, awaits inquiry by the Local Government Board. An analysis of the mixed sewage, in three samples, showed the "strength" to be "average."

POLLUTIONS OF RIVERS AND STREAMS.—Until a sewage scheme is in operation there will be no material alteration in the existing degree of pollution of the St. John's Eau.

SCAVENGING.—The work of the public scavenger with dust cart three mornings a week has been satisfactory, and results in much less nuisance from accumulations on ash-pits, etc. The Sanitary Inspector's Report records 19 ash-pits emptied.

WATER SUPPLY.—The water from the public wells has been satisfactory in quality and quantity. The Marham water, supplied to the town by the Wisbech Waterworks Company, is not yet available for the whole district, and is not laid on to as many houses as would derive benefit from it. Those occupiers who possess good well water are naturally not anxious for the extra expense, hence the mains of the Company are not yet widely distributed about the town.

SUPERVISED PREMISES.—There are 12 slaughterhouses in the district (8 licensed, 4 registered), which have all been periodically visited. There are 5 registered dairies and cowsheds which have been periodically inspected, and there has been no cause for serious complaint in this connection; suggestions for improvements have been cordially met. Inspections have been made of 28 factories and workshops on the register; 10 bake-offices (none underground); and the homes of 9 out-workers. No action has been required under the Act.

SCHOOLS.—At the Schools a complete new system of drainage has been put in, new closets with automatic flush, and the Marham water laid on both for flushing, lavatory purposes, and drinking; the new drains, installed at considerable expense, are excellent, with inspection chambers at every junction, and the work well done. Lighting and ventilation are still capable of improvement. The health of the children has been decidedly good during the year. I consider the sanitary condition of the Schools very satisfactory, a good water supply and good drainage.

BYE-LAWS.—Model Regulations of Local Government Board for Dairies and Cowsheds adopted.

NUISANCES.—Systematic inspections of the District have been made both by the Inspector and myself in the course of our other duties. Details given in Sanitary Inspector's record.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Disinfection (no note as to method), and destruction of articles which could not be disinfected, was carried out under the superintendence of the Sanitary Inspector. No Isolation Hospital available for this neighbourhood, and anything like efficient isolation in the houses of the poor is an impossibility. Suspicious cases of illness in the Schools must now be notified to both the M.O.H. and the School Medical Officer (Dr. Nash) by the Head Teacher on special forms.

DISS.

Medical Officer of Health, H. M. SPIERS, M.D.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	3,625	
Population	1901 Census	.. ..	3,800	
Population	1909 Estimated	.. ..	3,800	
Deaths registered in the District	.. ..	54		
Corrections—Additions	.. ..	0		
Corrections	.. ..	1		
			5 years' mean.	
		1909.	1904—1908.	
Nett Death Rate	.. ..	13·6	11·1	
Zymotic	.. ..	0·0		
Infantile Mortality	.. ..	89·2	97·08	
Birth Rate	.. ..	13·7	20·5	
Cases of Infectious Diseases per 1000 population		1·10		

DISTRICT.—Bounded on the South by the river Wavency and Suffolk. The town stands on ground sloping up from the river to a ridge running East and West. The Mere forms the lowest part of the town; until 1878, all sewage drained to it. The Mere is kept at a constant level by five springs in the centre; it overflows to the river. Geological strata—(1) boulder clay, (2) gravel and sand, (3) chalk.

CHIEF OCCUPATION OF INHABITANTS.—Ordinary trade for small town. Two mat and brush factories employ some hundreds. There are also a stay factory, an iron foundry, and one or two large maltings.

HOUSE ACCOMMODATION.—954 houses for a population of 3,800. 621 of these are cottages, renting below £8 per annum. There is a need for a certain class of house (cottages and small villas). The houses have gardens or yards. Asphalting of common yards suggested.

SEWERAGE AND DRAINAGE.—An excellent system of water-borne sewerage connects up the whole of the town, with the exception of the East end, and the country to the North. Plan of the system, it is suggested, should be prepared before water-pipes are laid down. The sewage is treated on sandy soil, and the effluent enters the river.

HOUSE REFUSE.—Not dealt with in Report.

WATER SUPPLY.—Remained the same during 1909, although the Urban Council consulted an Engineer, who selected a site for a deep well, which was approved by the M.O.H., but objections were raised to the site by the Local Government Board.

SUPERVISED PREMISES.—42 workshops and 1 underground bakehouse on the register. 21 visits of inspection. 4 nuisances in way of want of cleanliness and drainage of floors found and remedied.

SCHOOLS.—No comments on structural or sanitary conditions; but Attendance Prize Scheme criticised as tending to promote the spread of zymotic diseases.

BYE-LAWS.—None mentioned.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Not dealt with in present Report.

HUNSTANTON (NEW).

Medical Officer of Health, B. G. SUMPTER, M.B.

The Report is in MS., hectographed. A Newspaper copy in print was also obtained.

Area in Acres	1901 Census (exclusive of inland water)	..	487	
Population	1901 Census	.. ..	1,893	
Population	1909 Estimated	.. ..	1,893	
Deaths registered in the District	.. ..	28		
Corrections—Additions ..	.. ..	0		
Deductions	.. ..	7		
				10 years' mean.
		1909.	1899—1908.	
Nett Death Rate	.. ..	11·0	9·10	
Zymotic „	.. ..	..
Infantile Mortality	.. ..	100·00	78·40	
Birth Rate ..	.. ..	10·5	14·0	
Cases of Infectious Diseases per 1000 population		8·45		

DISTRICT.—The total number of persons per acre, after deducting the foreshore, is 6·5. In addition to the resident population, there is during the summer months a fluctuating population of visitors which brings the population for a time to 5,000 or 6,000 people, and there are great numbers of excursionists for the day.

SEWERAGE AND DRAINAGE.—I would suggest to your Council that a plan of the Urban District be made and kept in the Town Hall. I have visited the sewer outfall on several occasions, having heard a complaint that it was causing a nuisance to bathers. I never could detect any nuisance myself, but it is quite possible it might if people will bathe close to the outlet at low water. If the outfall were carried another 50 yards to sea it would be a great improvement.

64 drains and one sewer were tested, with either smoke or water, and found satisfactory.

EXCREMENT DISPOSAL.—Into the sea, after passing through a settling tank.

HOUSE REFUSE.—The scavenging and cleansing of the District is still carried out in a satisfactory manner by your own men, and all refuse continues to be burnt in the destructor.

WATER SUPPLY.—Excellent. As it is some time since an analysis was made, I should like your Council's permission to have it analysed again. The County Medical Officer of Health, in his Annual Report, advises the acquisition by the Council of a field abutting on the Waterworks to the East, which is at present under cultivation.

SUPERVISED PREMISES.—Cowsheds and Milkshops: There are two milkshops and one cowshed. The two former are satisfactory. The cowshed was not satisfactory, and the owner is now going to erect a new one according to a plan to be approved of by your Inspector.

Visits to bakehouses 8, visits to dairies and cowsheds 24, visits to workshops 63.

NUISANCES.—Number of inspections 420, re-inspections 96, complaints received 5, nuisances discovered 14, nuisances abated 14, notices served 7.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Seven out of nine cases of Scarlet Fever notified were treated in the Isolation Hospital. One case was treated in a private isolation hospital. One case was removed home in a private motor car. Rooms disinfected after death, removal, or recovery in the cases of Measles, Scarlet Fever, or Phthisis which came to the knowledge of the M.O.H. 37 houses were disinfected.

SHERINGHAM.

Medical Officer of Health, W. J. E. SUMPTER, M.D.

Deputy Medical Officer of Health, J. E. LINNELL, M.B., B.C., D.P.H.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	2,207	
Population	1901 Census	.. ..	2,359	
Population	1909 Estimated	.. ..	3,000	
Deaths registered in the District	.. ..	27		
Corrections—Additions	.. ..	0		
	Deductions	.. ..	0	
				7 years' mean.
			1909.	1902—1908.
Nett Death Rate	.. ..	9·00		11·6
Zymotic „	.. ..	0·00		
Infantile Mortality	.. ..	14·08		91·6
Birth Rate	.. ..	23·66		26·07
Cases of Infectious Diseases per 1000 population		40·66		

DISTRICT.—The Urban District of Sheringham is situated on the North coast of Norfolk, facing North; its area in acres is 2,207. Bounded by the sea on the North and by a low range of wooded hills which fall gently towards the sea on the South, it adjoins the Erpingham Rural District on three sides.

The population for the year 1909 has been estimated at 3000. During the Summer months many visitors resort to Sheringham for its natural beauties, and the population is considerably increased during July, August, and September.

CHIEF OCCUPATION OF INHABITANTS.—The inhabitants may be included in three groups—(1) fishermen and fisherfolk, (2) tradesmen and people who let rooms, (3) retired officers, business men, and men of independent means.

HOUSE ACCOMMODATION.—The housing of the people of Sheringham is satisfactory. The majority of the houses are of modern construction, built after plans had been presented and passed by the Sanitary Committee, and for the most part possess a water carriage system of sewerage, paved back yards, small gardens, and, of course, through ventilation.

SEWERAGE AND DRAINAGE.—The closets are, as a rule, of modern pattern with adequate flush; the drains are watertight and ventilated.

The cottages of the old fishing village are gradually disappearing. As is usual with old property, some of them were built without through ventilation or adequate road space, and long before the sewer was laid.

In addition, the rooms are small, the windows of insufficient size, and there is a general lack of convenience. In nearly all cases these cottages have been made habitable since the Urban District was formed.

The yards have been paved, water brought to within a few yards of their doors, and in many cases laid on. Pail closets provided, which are regularly emptied

It is not possible to enforce through ventilation for existing property, and the gravest defect is now in the inhabitant rather than the habitat.

There is still some scarcity of four-room cottages at a moderate rental.

EXCREMENT DISPOSAL.—The sewers are of modern construction and work satisfactorily. In the West end the fall is not excessive, but we have had no trouble or complaint in connection therewith.

HOUSE REFUSE.—The dustbins and earth closets which still exist in a few streets and yards are emptied twice weekly by the Council.

At present the refuse is carted outside the Urban District, but the Local Government Board, after an Enquiry, have now sanctioned a loan for a Refuse Destructor.

WATER SUPPLY.—The water of Sheringham is supplied by the Sheringham Gas and Water Company. (*See page 52.*)

SUPERVISED PREMISES.—Nine factories and 31 workshops registered. These and dairies, cowsheds, and milkshops have all been visited during the year.

SCHOOLS.—“Remain in a high state of efficiency as regards the fabric. We think they are almost perfect.”

BYE-LAWS.—The Building Bye-laws of the Local Government Board are adopted and enforced; also bye-laws for dairies, cowsheds, and milkshops.

NUISANCES.—In all cases of complaint, nuisance, or suspicious infection, the Sanitary Inspector tests the drains. In case of defect, notices are served if necessary, and the defect remedied.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—No hospital for infectious disease. Early intimation from Schools, rigid isolation of cases at home, and subsequent disinfection by means of formalin spray vapour are the means employed. The erection of a steam disinfecter is under consideration.

SWAFFHAM.

Medical Officer of Health, A. W. THOMAS, L.R.C.P.

The Report is in MS. A newspaper reprint sent.

Area in Acres	1901 Census (exclusive of inland water)	..	7,144
Population	1901 Census	.. ..	3,370
Population	1909 Estimated	.. ..	3,300
Deaths registered in the District	.. ..	..	51
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	3
5 years' mean.			
1909. - 1904—1908.			
Nett Death Rate	.. ..	14.54	16.55
Zymotic	.. ..	60	
Infantile Mortality	.. ..	106.06	
Birth Rate	.. ..	20.00	
Cases of Infectious Diseases per 1000 population			

SEWERAGE AND DRAINAGE.—Separate drains for surface water and sewerage. The sewage is carried by pipes four miles in length to a sewage farm two miles from the town. After preliminary treatment with alumino-ferric it flows to the beds and settles away in trenches. On the farm lucerne and mangolds are grown.

SCAVENGING.—Done by the Council's own men and carts—one for house refuse and one for night soil.

EXCREMENT DISPOSAL.—Most houses have pails, but there are still a few privy vaults. Three of these were converted into pail closets.

HOUSE REFUSE.—Some houses have sanitary dustbins; others still have ashpits emptied when required.

WATER SUPPLY.—Pumped from a well in the chalk, 165 feet deep, to a reservoir, and thence distributed by mains to the town. “The supply during the year has been constantly good in quality and quantity.”

SUPERVISED PREMISES.—Inspections were carried out. No defects found. Dairies found clean and in good order.

NUISANCES.—59 nuisances were satisfactorily abated.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“In every case prompt measures were taken to disinfect and isolate.” [No particulars given in detail. Notification of Measles is suggested, but no reasons assigned nor details as to what measures would be taken as a result. Hospital isolation not referred to in this year's Report. 49 notifications of Scarlet Fever during the year.]

WALSHAM (NORTH).

Medical Officer of Health, J. SHEPHEARD, M.R.C.S.

The Report is Typewritten.

Area in Acres	1901 Census (exclusive of inland water)	..	4,252	
Population	1901 Census	.. ..	3,981	
Population	1909 Estimated	.. ..	4,345	
Deaths registered in the District	.. ..	..	59	
Corrections—Additions	.. ..	..	0	
	Deductions	.. ..	0	
				10 years' mean.
				1909. 1899—1908.
Nett Death Rate	.. ..	13·5	13·8	
Zymotic „	.. ..	·23		
Infantile Mortality	.. ..	84·9	117·5	
Birth Rate	.. ..	24·3	25·9	
Cases of Infectious Diseases per 1000 population		0·46		

DISTRICT.—The town is situated on high ground in the centre of a District of over 4000 acres.

CHIEF OCCUPATION OF INHABITANTS.—Agriculture, building, agricultural implement making.

HOUSE ACCOMMODATION.—Ample, with good surroundings as a rule, but some in the older parts of the town are crowded together. These are gradually being vacated for the newer houses. No building bye-laws or supervision by the Sanitary Authority over the erection of new houses. No action taken under the H.W.C. Acts.

SEWERAGE AND DRAINAGE.—Open channels convey all surface water and household slops to larger land drains in the low-lying ground to the North of the town, finally discharging into a canal which runs along the N.-E. boundary. No system of sewerage exists.

EXCREMENT DISPOSAL.—Night carts collect contents of pail closets, which are carried beyond the Urban area. The M.O.H. advocates a systematic system of cleansing the pans, substituting cleaned ones for those taken away to be cleansed.

HOUSE REFUSE.—Removed by a public scavenger.

WATER SUPPLY.—A “good and sufficient” public supply from a deep well is delivered by gravitation from a pumping station on high ground to the South-East of the town to 894 houses. The water supply to houses on White Horse Common is obtained from wells (shallow).

SUPERVISED PREMISES.—8 slaughterhouse, 5 cowsheds, and 3 lodging-houses have been inspected and found “satisfactory.” Inspections were also made of 39 workshops, 11 factories, and 7 bakehouses.

SCHOOLS.—Sanitary accommodation reported as “unsatisfactory and inadequate.” No lavatories. No cases of zymotic disease during 1909. The M.O.H. indicates his intention to utilise the notification forms suggested by the County M.O.H.

BYE-LAWS.—“No special bye-laws.”

NUISANCES.—No nuisances were reported or discovered during the year.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—No isolation hospital. Isolation and disinfection carried out as far as possible under the conditions existing. In connection with two cases of Pulmonary Consumption notified during the year, the houses were visited and instructions (? verbal) given. No action taken after death in any case. (No death occurred in any notified case.)

WALSOKEN.

Medical Officer of Health, H. GROOM, M.D.

The Report is Typewritten. A Newspaper reprint was also sent.

Area in Acres	1901 Census (exclusive of inland water)	..	4,652	
Population	1901 Census	.. ..	3,250	
Population	1909 Estimated	.. ..	3,624	
Deaths registered in the District	.. ..	43		
Corrections—Additions ..	.. ..	0		
Deductions	.. ..	0		
			10 years' mean.	
			1909.	1899—1908.
Nett Death Rate	.. ..	11·86	15·14	
Zymotic „	.. ..	·82		
Infantile Mortality	.. ..	144·06	151·88	
Birth Rate ..	.. ..	32·56	31·52	
Cases of Infectious Diseases per 1000 population		9·93		

CHIEF OCCUPATION OF INHABITANTS.—The printing factory employs a large number. Fruit culture and agriculture are the chief employments.

HOUSE ACCOMMODATION.—“The condition of the houses and yards in old Walsoken has much improved.”

SEWERAGE AND DRAINAGE.—The disposal of sewerage matter, etc., is having careful attention. The working of sewers and drains has been satisfactory. “Periodical flushing of these would further greatly assist in their efficiency.”

WATER SUPPLY.—Excellent, except for outlying country houses.

NUISANCES.—“Any Nuisance which has come to my knowledge has been attended to and removed as soon as possible.”

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“In every case of infectious disease which has been notified great care has been taken in the supplying of disinfectants, and in obtaining proper isolation.” One case out of 11 cases of Scarlet Fever, and 7 out of 20 notified cases of Diphtheria were removed to the Isolation Hospital.

WELLS-NEXT-THE-SEA AND PORT.

Medical Officer of Health, G. CALTHROP, M.B.

The Report is Typewritten.

Area in Acres	1901 Census (exclusive of inland water)	..	2,025	
Population	1901 Census	.. ..	2,491	
Population	1909 Estimated	.. ..	2,450	
Deaths registered in the District	.. ..	34		
Corrections—Additions ..	.. ..	0		
Deductions	.. ..	0		
			10 years' mean.	
			1909.	1899—1908.
Nett Death Rate	.. ..	13·87	15·6	
Zymotic „	.. ..	..
Infantile Mortality	.. ..	55·5	101·9	
Birth Rate ..	.. ..	22·04	24·5	
Cases of infectious diseases per 1000 population				

CHIEF OCCUPATION OF INHABITANTS.—Malting, farming, and fishing.

HOUSE ACCOMMODATION.—“On the whole sufficient.” “A few cases of large families where overcrowding is almost inevitable.” The houses are mostly old and bundled together with, in some places, lack of sufficient air space between them. Scarcely any new cottage property has been erected for many years.

SEWERAGE AND DRAINAGE.—“The slop waters and rain water are conveyed by drains, which discharge along the foreshore, at the Quay, and at the East and West sluices. The slop waters, by discharging along the Quay, contaminate the mussel lays.”

EXCREMENT DISPOSAL.—“The dry pail and cemented box system of excremental disposal is used throughout the town, and is found to work satisfactorily.”

HOUSE REFUSE.—“Is removed regularly by the scavenger.”

WATER SUPPLY.—Mostly from shallow wells—sufficient in quantity, and, on analysis, usually pronounced to be “fairly pure and wholesome.” But many wells near gullies are liable to be contaminated by slop water and surface drainage. Schemes for a constant pure supply have been proposed, but not met with favour by the Council.

SUPERVISED PREMISES.—Dairies and cowsheds satisfactory. No complaints as regards slaughter-houses. Factories, workshops, and workplaces were inspected, but nothing requiring action found.

SCHOOLS.—“These are in good sanitary condition. The dry pail system is used in the Boys’ School, and a latrine system, which, in my opinion, is not nearly so suitable, is adopted in the Girls’ School.”

METHODS OF DEALING WITH INFECTIOUS DISEASES.—There were only two notifications during the year—one of Scarlet Fever and one of Diphtheria. The notification of Pulmonary Tuberculosis is recommended. In known cases advice was given as regards the prevention of infection, and rooms were fumigated with formalin after death. Three persons died of Tuberculosis during the year.

KING’S LYNN (Borough of).

Medical Officer of Health, J. R. KINGDON, B.A., M.R.C.S., L.R.C.P.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	3,099	
Population	1901 Census	..	20,128	
Population	1909 Estimated	..	21,584	
Deaths registered in the District		..	265	
Corrections—Additions		..	0	
	Deductions	..	15	
				10 years’ mean.
			1909.	1899—1908.
Nett Death Rate	..	..	11·58	14·07
Zymotic „	..	..	0·27	
Infantile Mortality	..	..	72·4	126·63
Birth Rate	..	..	23·6	25·6
Cases of notified Infectious Diseases per 1000 population	..	..	4·58	

“A full Report having been made as late as the end of October by Dr. F. St. George Mivart, I have not deemed it necessary to enlarge on many points in this Report. All Dr. Mivart’s recommendations are receiving careful attention.”

HOUSE ACCOMMODATION.—The Sanitary Inspector reports :—“By instruction of the Health Committee, I have, in conjunction with the Medical Officer of Health, visited and inspected all the courts and yards in the borough, with a view to ascertaining the number of houses unfit for human habitation, which resulted in the Medical Officer of Health making eighteen representations under the Housing of the Working Classes Act, 1890-1903. The question of overcrowding is one of great difficulty to your Sanitary Officers, and also to the people concerned. There are several causes which assist in producing overcrowding, but the chief of all I believe to be the absence of houses to be obtained at such rents as this class of people can afford to pay.”

Buildings.—During the year ended 31st December, 1909, 58 plans have been approved.

SEWERAGE AND DRAINAGE.—“The whole of the sewers of the town are in good condition and properly ventilated.”

SUPERVISED PREMISES.—“I am glad to be able to state that the workshops and work places have been inspected from time to time, and have been found to be in such a condition that I am able to report very favourably upon them. Within the last few months I was interviewed by the Inspector of Factories in this district, who expressed himself quite satisfied with the local administration of this Act in the borough. In the Report of the Inspector of Nuisances, which is appended, a more detailed account will be found, such as I believe to be required.” The Inspector reports:—

“Dairies, Cowsheds, and Milkshops.—There are 68 registered milksellers in the borough, of whom 30 are milkshop proprietors, 16 milksellers and cowkeepers, and 22 milksellers and cowkeepers who reside outside the borough boundary.

“Factories and Workshops Act.—The inspection of premises under the above Act has received a fair share of attention, and in no case has it been necessary to report to the Council to obtain the necessary lime-washing and improvements, as the occupiers or owners have at all times been ready to carry out any suggestions I have made.

“Slaughter-Houses.—I have nothing of a special character to report with regard to the inspections made at the slaughter-houses in the district, except to say that the premises have been kept in fair condition so far as their structure and situation would permit.”

BYE-LAWS.—Several matters referred to in the Report of Dr. Mivart, L.G.B. Inspector, are under consideration, chief among which are the revision of the slaughter-house bye-laws and the provision of a public abattoir, and the adoption of the Board’s model code of regulations for dairies, cowsheds, and milkshops.

NUISANCES.—The insanitary conditions existing in various yards in the borough at the time of the L.G.B. Inspector’s visit, and referred to in his Report, have been remedied.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“During the year a properly constructed vehicle containing a number of receptacles was obtained, and all excrement in Typhoid cases will in future be collected and destroyed by fire in a destructor.”

Separate Isolation Hospitals for Small Pox and for other infectious diseases (12 beds) provided. [See also under Tuberculosis.]

THETFORD (Borough of).

Medical Officer of Health, A. Harris, M.B.

The Report is Typewritten.

Area in Acres	1901 Census (exclusive of inland water)	..	7,096
Population	1901 Census	4,613
Population	1909 Estimated	4,613
Deaths registered in the District	.. ..	72
Corrections—Additions	.. ..	0
Deductions	.. ..	14
			10 years' mean.
			1909. 1899—1908.
Nett Death Rate	.. ..	12·5
Zymotic „	.. ..	0·0
Infantile Mortality	.. ..	84·2
Birth Rate	.. ..	20·5
Cases of Infectious Diseases per 1000 population		1·73	

CHIEF OCCUPATION OF INHABITANTS.—Agriculture, engineering, malting, and trading.

HOUSE ACCOMMODATION.—On the whole fairly good. In the poorer quarters many cottages need sanitary improvement. “There are several which I should like to see condemned.” Early in the year a house-to-house inspection of the Pike Lane area was made, and a detailed report made to the Urban Council. At the time of writing his report, the M.O.H. states that no action had been taken in connection with this area—but building byelaws will be adopted and stricter supervision over the erection of new houses will be possible.

SEWERAGE AND DRAINAGE: POLLUTION OF RIVERS AND STREAMS.—

“A new sewer is being laid to serve the Pike Lane area. The house drains are to be connected and the outfalls into the river are to be provided with filters. These filters will no doubt serve the purpose of intercepting a certain amount of solid matter, but I am afraid will not have much effect in rendering the effluent into the river innocuous.”

EXCREMENT DISPOSAL.—During the year 11 privy vaults were converted into pail closets, and 4 privy closets repaired. Scavenging now done by the Council on request of householders. “The work is now more thoroughly and efficiently carried out, and is an improvement on the old system.”

HOUSE REFUSE.—“Is removed systematically each week by the Council, and such as admits of it is destroyed by burning.”

WATER SUPPLY.—“Continues satisfactory.” Recent analyses show “the water to be perfectly pure.” Only 10 houses in the town not connected with the main supply.

SUPERVISED PREMISES.—Cowsheds frequently inspected and generally in good order. Two still need improved drainage and paving. Slaughter-houses in good order and kept clean, but more care required to prevent blood, etc., entering the surface drains. Under F. and W. Act 48 inspections made.

SCHOOLS.—“In good sanitary condition.”

BYELAWS.—Building Byelaws based upon the L.G.B.’s Model Series.

NUISANCES.—110 minor nuisances were dealt with. The M.O.H. recommends the concreting of several yards.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—On notification, inquiries made at the infected premises, disinfectants supplied, children excluded from School, and official notice given to head teachers. At termination of case disinfection by formalin vapour and spray is followed by cleansing and the walls are usually stripped and repapered.

No steam disinfection, but Council compensates owners for articles burnt when such cannot otherwise be disinfected. The Council provides anti-diphtheritic serum in necessitous cases, both for treatment of Diphtheria and for prophylactic purposes. Pauper cases of Tuberculosis notified are visited and instructed. Disinfectants and “spit-bottles” are supplied and rooms disinfected.

II. RURAL DISTRICTS.

AYLSHAM.

Medical Officer of Health, H. H. BACK, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	69,341
Population	1901 Census	.. ..	17,053
Population	1909 Estimated	.. ..	16,733
Deaths registered in the District	.. ..	..	209
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	0
			10 years’ mean.
			1909. 1899—1908.
Nett Death Rate	.. ..	..	12·4
Zymotic	„ ..	..	0·23
Phthisis	„ ..	..	0·65
Infantile Mortality	.. ..	..	89·4
Birth Rate	.. ..	..	22·5
Cases of Infectious Diseases notified per 1000 population	.. ..	..	2·86

HOUSE ACCOMMODATION.—On larger estates excellent cottages in good repair; in many villages where the cottages are in the hands of small owners, the class of cottage prevailing is below a decent standard. Five cases of overcrowding were dealt with. Reference made to Housing Act of 1909 (q.v.)

SEWERAGE AND DRAINAGE.—A further 210 yards of open ditch, receiving a portion of the sewage of the town of Aylsham, has been piped, the outfall ditch being a field ditch. The public drains in Reepham and Cawston have been improved.

POLLUTION OF RIVERS AND STREAMS.—The pollution of the Bure as it passes through Coltishall was carefully enquired into; 15 direct sources and 30 indirect sources of pollution were discovered. Many of them were comparatively trivial, but some instances of grave pollution from overflowing cesspools and from a slaughterhouse were noted.

EXCREMENT DISPOSAL.—The deep privy bin is gradually being replaced by pail system or cemented-surface bins.

HOUSE REFUSE.—64 ashpits in Aylsham town during the year were replaced by iron sanitary dustbins. Public scavenging, at a cost of £65 to the town. Similar provision is recommended for the town of Reepham.

WATER SUPPLY.—Ten new wells sunk, five old wells repaired, and nine cleaned out.

SUPERVISED PREMISES.—14 registered dairies, 17 slaughterhouses, and 26 bake-houses regularly inspected.

BYE-LAWS for dairies adopted.

NUISANCES.—General Inspections made by M.O.H. in company with two Inspectors. “The work of the Inspectors is effecting a permanent improvement in the sanitary condition of the district.”

METHODS OF DEALING WITH INFECTIOUS DISEASES.—A small isolation hospital for three patients and a nurse exists, but was not utilised. Bacteriological aid afforded to medical men, at cost of Rural District Council, in the diagnosis and control of Diphtheria. Disinfection (mode not stated) of infected rooms.

BLOFIELD.

Medical Officer of Health, H. H. BACK, M.B.

The Report is Typed.

Area in Acres	1901 Census (exclusive of inland water)	..	43,734
Population	1901 Census	.. ..	10,928
Population	1909 Estimated	.. ..	10,688
Deaths registered in the District	.. ..	..	136
Corrections—Additions	.. ..	..
Deductions	.. ..	..
		1909.	10 years' mean. 1899—1908.
Nett Death Rate	.. ..	12·7	
Zymotic „	.. ..	·51	
Infantile Mortality	.. ..	117	
Birth Rate	.. ..	24·6	
Cases of Infectious Diseases per 1000 population		4·3	

HOUSE ACCOMMODATION.—A register of dwelling-houses is in process of formation, in which the sanitary condition of 305 cottages is described in detail. Additions made each year. The following figures are given for number of cottages inspected in 11 parishes:—Blofield 37, Burlingham 6, Freethorpe 32, Halvergate 76, Limpenhoe 14, Moulton 5, Great Plumstead 11, Ranworth and Panxworth 13, Reedham 70, Upton 14, South Walsham 27. The information includes (1) number of rooms and number of inmates; (2) description of privy; (3) garden; (4) water supply; (5) drainage. [See under *Housing Accommodation*, p. 41.]

SEWERAGE AND DRAINAGE.—Very few villages are drained. Extension of sewer at Freethorpe is recommended. Plans have been submitted to the Local Government Board for the drainage of Thorpe St. Andrew. The provision of a system of drainage for Brundall has been discussed, but has gone no further at present.

EXCREMENT DISPOSAL.—The pail system is advocated and is superseding old privies.

HOUSE REFUSE.—A scavenger employed for Thorpe St. Andrew.

WATER SUPPLY.—Two new wells have been sunk and four cleaned out or repaired.
[See Report for 1908].

SUPERVISED PREMISES.—A Report, giving a detailed account of cowsheds constructed in such a way as to make it impossible for the Bye-laws (? Regulations) to be complied with, was presented. Action was deferred in view, apparently, of expected fresh legislation.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Notification. Bacteriological aid in Diphtheria, both for diagnosis and convalescence. Prophylactic doses of antitoxin. Semi-isolation in cottages. No hospital isolation, except for Small Pox. Exclusion of children from School or closure of Schools, in co-operation with School Medical Officer (the County Medical Officer of Health). Pamphlets and disinfectants distributed, and rooms fumigated with formic aldehyde vapour at end of infectious illness. Phthisis or Pulmonary Tuberculosis cases notified, visited, and advice given: spitting cup or flask provided; disinfection of room occupied by the patient after death.

DEPWADE.

Medical Officer of Health, J. C. R. ROBINSON, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	77,631	
Population	1901 Census	...	20,489	
Population	1909 Estimated (on Birth Rate same as in 1901)		19,178	
Deaths registered in the District	..	..	259	
Corrections—Additions	..	..	0	
Deductions	..	..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	..	..	13.30	13.40
Zymotic	..	..	0.20	
Phthisis	..	..	0.52	
Infantile Mortality	..	..	78.5	
Birth Rate	..	..	21.9	
Notifications of Infectious Diseases	per 1000			
population	..	..	6.10	

CHIEF OCCUPATION OF INHABITANTS.—Mentioned in last year's Report.

HOUSE ACCOMMODATION.—“Gradual improvement is noticeable.” Nine cases of overcrowding reported and remedied, 2 cases in one parish (Tacolnestone, with a population of 325). New houses erected in Harleston, Tibenham, and Winfarthing. House at Roydon closed as unfit for human habitation. Several premises put into habitable repair.

SEWERAGE AND DRAINAGE.—Harleston main drainage still under consideration. New sewers laid in Needham Road and Station Road. Long Stratton still in an insanitary condition. New drains at Tivetshall Ram, Moulton, and Aslacton.

HOUSE REFUSE.—No public scavenger. Nuisances often arise from carelessness on part of occupiers.

WATER SUPPLY.—No public service—most supplies being shallow wells, a few larger houses have good supplies from deep borings in the chalk. In some straggling villages some of the Inhabitants have only pond water to depend upon.

SUPERVISED PREMISES.—Bakehouses, workshops, and slaughterhouses have been regularly inspected. Some minor defects were noted and remedied.

SCHOOLS.—During the year 6 Schools were closed on account of Scarlet Fever, 12 on account of Measles, 1 on account of Whooping Cough, and 2 on account of Mumps.

NUISANCES.—Over 200 reported in the course of 1500 visits of inspection. To remedy these, several (?) houses have been redrained, many (?) pail closets substituted for privies, 3 houses cleansed, 1 (in Roydon) closed, several (?) ditches and pits cleaned out

METHODS OF DEALING WITH INFECTIOUS DISEASES.—No isolation hospital. In connection with Scarlet Fever the M.O.H. advised the closure and disinfection of 6 Schools with the destruction of obsolete (?) books. Methods of disinfection remain the same (not detailed).

DOCKING.

Medical Officer of Health, B. G. SUMPTER, M.B.

Report is in Hectograph (MS.)

Area in Acres	1901 Census (exclusive of inland water)	..	87,481	
Population	1901 Census	.. ..	15,741	
Population	1909 Estimated	.. ..	15,741	
Deaths registered in the District	.. ..	221		
Corrections—Additions	.. ..	0		
Deductions	.. ..	0		
			10 years' mean	
		1909.	1899—1908.	
Nett Death Rate	.. ..	13·6	14·1	
Zymotic	.. ..	·31		
Infantile Mortality	.. ..	80·4	104·8	
Birth Rate	.. ..	23·6	24·4	
Cases of Infectious Diseases per 1000 population		3·93		

DISTRICT.—37 Parishes. The ratio of population in the District is 1 person to every 5½ acres.

HOUSE ACCOMMODATION.—Six cottages were declared unfit for habitation ; 4 are now empty; 2 have been satisfactorily repaired; 3 which had previously been condemned have been rendered habitable.

EXCREMENT DISPOSAL.—26 privies converted to pails.

WATER SUPPLY.—6 Wells repaired, 8 cleansed, 1 closed. Occasional samples taken for bacteriological examination.

SUPERVISED PREMISES.—Cowsheds, workshops, and slaughterhouses inspected. Complaint was received as to a slaughterhouse at Heacham which is within 50 yards of a dwelling-house.

SCHOOLS.—Defects at Sedgeford School still exist. Bircham Infants' School, ventilation insufficient, walls of cloak room damp. Holme School, substitution of pail closets for privy vaults advised. Thornham School, one class room insufficiently lighted and ventilated. Rudham School, urinal offensive.

General Remarks re Schools.—“ It seems a great pity that the pail system is not carried out in its entirety, i.e., dry earth or ashes put into pails daily to soak up all moisture. In several cases the pails were very offensive. I repeat my suggestion of last year, that for children coming from a distance provision should be made for drying their clothes and boots when wet and providing them with a basin of hot soup in very cold weather.”

BYE-LAWS.—No building bye-laws in force.

NUISANCES.—437 abated, 136 notices served, 3 summonses issued and convictions obtained, 3208 inspections and 1146 re-inspections, 2 filthy houses cleansed, 3 cases of overcrowding abated.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Notified dwellings visited and enquiries made. House isolation and subsequent disinfection of rooms, clothes, etc., other children in house kept from School. Swabs taken in connection with Diphtheria. Well water and shellfish inquired into in connection with Typhoid Fever. In Phthisis necessary precautions explained and a spittoon and disinfectants supplied. Room disinfected after death or removal.

DOWNHAM.

Medical Officer of Health, G. F. CROSS, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	82,834	
Population	1901 Census	..	14,837	
Population	1909 Estimated	..	15,000	
Deaths registered in the District	..	..	197	
Corrections—Additions	..	..	13	
Deductions	..	..	0	
				10 years' mean.
			1909.	1899--1908.
Nett Death Rate	..	..	14.00	15.30
Zymotic „	..	..	.60	
Infantile Mortality	..	..	96.68	122.02
Birth Rate	..	..	24.13	24.67
Cases of Infectious Diseases per 1000 population			3.26	

DISTRICT.—The Downham Rural District comprises an area of 82,834 acres, divided into 34 Parishes. These are divided into three sub-districts, viz., Downham, Wiggenhall, and Fincham. The District is almost an entirely agricultural one. There are no industries of a dangerous kind. The District is divided by the River Ouse. On the East there is a gentle rising slope with a subsoil of gravel and green sandstone, and further eastwards of chalk. This part is well wooded and the soil fairly productive. On the West is the edge of the great Fen District, with a subsoil of peat and clay. The land is very productive. Market gardening and potato growing give employment to many.

HOUSE ACCOMMODATION.—There is no doubt that *in certain parts of the District there is a scarcity of houses for the labouring classes, and cases of overcrowding are not uncommon.* When the question of closing old houses as being unfit for human habitation arises, the problem of where the tenants are to find homes makes one hesitate in recommending that orders should be applied for, and inclines one to adopt less drastic measures.

The rents that agricultural labourers can pay are not in proportion to the present cost of building, and unless means can be found to increase the rent-paying capacity of the former, or to reduce the latter, it is difficult to see how conditions can be improved.

In my last year's report I gave as an example two rows of cottages in Barroway Drove. One of the most useful sections of the new Housing Act, 1909, is that which empowers a County Council to promote the formation of coöperative working class Building Societies. I believe that this will be one of the means of effecting improvement in the housing of the working classes, and would enable some to become the owners of their homes.

I don't think it is any exaggeration to say that if you deduct from the total sum of disease at any one time existing in the country all that can be clearly and unmistakably traced to human and prevenatble causes—to obvious sanitary deficiencies on the one hand, or, on the other, to vice or folly, or both, either in the individual (suffering) or in his parents—you would have a comparatively small amount to be dealt with. You may be able to show how many people die of bad drainage in some particular place, or of the effects of drink and vice, but no figures can give the infinitely larger sum total of strength broken and constitution ruined from the same causes, the number of instances in which no immediate result is seen to follow; but when some slight and casual attack of illness comes on, the man, previously weakened, has no power to resist it and dies.

In sanitary matters at least the future of the world need not be like its past. Take the overcrowding and foul air inside, and undrained yards with foul refuse outside, which so helps up the death rate. The cause is not in the arrangements of nature, but in ourselves, and the fault lies as much with the tenant as with landlord. There should be for working men and their families good and cleanly houses, plenty of air and light, fit places for the storage of food, and proper sanitary arrangements outside. If these conditions were fulfilled we should have children healthy in body and mind, and living in houses which make self-respect possible.

SEWERAGE AND DRAINAGE.—A full report on the Sewerage of Hilgay is being prepared. At Fineham it is proposed to relay new length of sewer. Seven foul ditches have been cleaned out.

POLLUTION OF RIVERS AND STREAMS.—A sudden pollution of the Wissey was found to be due to the discharge of chemicals from a factory outside the District. Precautions have been taken to prevent recurrence. The river Ouse is polluted by the Littleport sewage at the Ten Mile Bank. The District Council was in negotiation with the Ely Rural District Council at the date of the M.O.H.'s report.

EXCREMENT DISPOSAL AND HOUSE REFUSE.—House Scavenging is in vogue at Fineham and Hilgay, the refuse being removed weekly. Privy vaults and water closets at Bridge Street and Farthing Square, in Downham West, converted into pail closets, and a scavenger provided.

WATER SUPPLY.—From the Marham Water Works Company the villages of Fineham, Bexwell, Downham West (parts), Wormegay, Watlington, St. Germans, 90 houses in Wimbotsham and Magdalen. In the centre of the District shallow wells (unsatisfactory). In the Fen District rain water is collected in underground tanks. [See also Section on Water Supplies.]

SUPERVISED PREMISES.—11 registered Dairies and Cowsheds (2 registered in 1909). Conditions improved, "but a good deal remains to be done." Sanitary requirements "are frequently allowed to slide until a visit is made." Nine Slaughterhouses visited and 3 defects remedied; 2 new Slaughterhouses have been constructed under the Inspector's supervision. 63 registered Workshops: 35 were visited and 3 defects found remedied,

SCHOOLS.—Inspection made of the 26 Schools in the District. Defects reported in the previous Annual Report have been remedied at West Dereham, St. Germans, Denver, and Fineham, and are partially remedied or nothing done as yet in some of the other Schools.

BYE-LAWS.—No Building Bye-laws, but supervision kept over new houses and alterations suggested have been carried out.

NUISANCES.—150 Preliminary and 6 Statutory Notices were issued for the abatement of nuisances, 110 of which had been complied with at date of report.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—There is no Isolation Hospital in the District. Disinfection at end of case is by spraying walls, floor, and furniture with formalin solution and fumigating with formalin lamps. School notifications are dealt with (if necessary in conjunction with the School Medical Officer, who is also County M.O.H.) and bacteriological aid sought in connection with Diphtheria.

ERPINGHAM.

Medical Officer of Health, T. W. RICHARDSON, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	60,735	
Population	1901 Census	.. ..	16,054	
Population	1909 Estimated	.. ..	18,031	
Deaths registered in the District	.. ..	187		
Corrections—Additions	.. ..	0		
	Deductions	.. ..	1	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	.. ..	10·31	13·48	
Zymotic	.. ..	·38		
Infantile Mortality	.. ..	81·15	99·53	
Birth Rate	.. ..	21·13	25·17	
Cases of Infectious Diseases per 1000 population		3·71		

DISTRICT.—Re-arrangement of the Sub-Districts during 1909. Now two Sub-Districts known as Cromer and Sheringham Sub-Districts.

CHIEF OCCUPATION OF INHABITANTS.—Mainly agricultural.

HOUSE ACCOMMODATION.—Private enterprise has provided some additional cottage accommodation, but many more cottages are needed to obviate overcrowding.

SEWERAGE AND DRAINAGE.—In the Parishes of Mundesley, East and West Runton, Overstrand, Holt, Cley, and Aldborough, sewerage systems provided. Parts of Northrepps, Trunch, Weybourne, Thornage, Gresham, and Briston have piped sewers. Serious complaints as to the drainage arrangements of Briston village. The chief difficulty is the absence of fall for drainage.

EXCREMENT DISPOSAL.—In most villages the pail closet system.

HOUSE REFUSE.—In Mundesley, Holt, Cley, and Overstrand public scavenging of house refuse, etc., is done by contract.

WATER SUPPLY.—Mundesley, Holt, and Kelling possess public water supplies. The Cromer Council's Water Works supply Overstrand, Felbrigg, East and West Runton, and part of Roughton.

SUPERVISED PREMISES.—Numerous visits paid to cowsheds and dairies. "Much improvement has been made in the conditions under which the milk business has been carried on in the District." 108 inspections of workshops and workplaces. 14 defects found and remedied.

BYE-LAWS.—For the regulation of gipsy van dwellers, slaughterhouses, common lodging houses, and dairies, cowsheds, and milkshops, in force throughout the District. As to new streets and buildings in Overstrand, Mundesley, Runton, and Cley.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—No Isolation Hospital. Two prosecutions for concealment of an infectious disease. [No other information given in the Report.]

FLEGG (EAST & WEST).

Medical Officer of Health, W. ROYDEN, M.R.C.S., L.R.C.P.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	30,000
Population	1901 Census	.. ..	9,909
Population	1909 Estimated	.. ..	9,909
Deaths registered in the District	.. ..	..	129
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	0
		1909.	10 years mean. 1899—1908.
Nett Death Rate	.. ..	12·9	
Zymotic „	.. ..	0·2	
Infantile Mortality	.. ..	62·7	
Birth Rate	.. ..	27·34	
Cases of Infectious Diseases per 1000 population			

DISTRICT.—The District has an area of nearly thirty thousand acres and a population approaching ten thousand persons. It is made up of first-rate arable land, excellent grazing marshes, and several fine sheets of water, known as Burgh, Filby, Rollesby, Ormesby, and Somerton Broad. It is an irregular triangle in shape, and is almost entirely surrounded by water, a narrow strip of land at Somerton alone preventing it being a complete island. Upon two side of the triangle are the Rivers Bure and Thurne, and upon the third the sea.

CHIEF OCCUPATION OF INHABITANTS.—The principal industry is agriculture, and nine-tenths of the population are engaged, directly and indirectly, in that pursuit. Compared with the rest of the County, the District may be described as flourishing, and there are practically no able-bodied unemployed.

HOUSE ACCOMMODATION.—Some good cottages have been built, and by means of the Building Bye-Laws now in force, I feel certain the health of the District will improve, as the plans for the drainage, wells, etc., have to be passed by the Council before the work can be put into operation.

SEWERAGE AND DRAINAGE.—There is no regular system of drainage in the District. Main sewers in certain streets in Caister-on-Sea flushed weekly in summer. A new sewer in Bultitude's Loke, Caister, is to receive the drainage of 19 houses, and another at Clinque, West End, Caister, to receive the drainage of 7 cottages. The Inspector reports that in the parish of Martham a septic tank has been placed on the main drain just before it enters the pond, and that after six months it is working satisfactorily, as no nuisance is now perceptible arising from the pond.

POLLUTION OF RIVERS AND STREAMS.—No offensive trades nor occupations likely to pollute the rivers are carried on in the District. (The Report gives no information as to pollution from private sources, houses, etc.)

EXCREMENT DISPOSAL.—Earth closets with pails to ensure frequent removal are now in general use.

WATER SUPPLY.—“The water, derived from deep wells, is of excellent quality, and every parish has an abundant supply. Where shallow wells exist, they are likely to be polluted from several causes, therefore when convenient it would be far safer to lay on a supply from the Water Works Co.”

“One portion of the Village of Ormesby was, owing to shallow wells and the ground having been used for years as the receptacle for house slops, practically without good water. This was proved beyond doubt after very careful Analysis. I advised that the several houses should be supplied from the Water Works Co. This work, I am pleased to say, is in progress and will be of great benefit, as a good water supply very greatly minimises the risk of infection. At Caister-on-Sea 15 premises have been connected up with the Yarmouth water mains.”

SUPERVISED PREMISES.—42 inspections of workshops; 4 defects found and remedied. 130 inspections of dairies and cowsheds.

SCHOOLS.—*Great Ormesby*: Drainage requires overhauling; warming insufficient; playground should be tar-paved; arrangements for disposal of contents of closets bad. *Filby*: Drains liable to be choked up; no vent shaft to drains; cesspool should be emptied periodically; playground requires tar-paving.

BYE-LAWS.—Building Bye-laws in force.

NUISANCES.—Nuisances abated, 190; Notices served, 88 (8 legal). “The Sanitary Inspector and I attend the fortnightly Meeting of the Council and report upon the prevailing conditions.”

At Ormesby, several improvements have been made, and in every case where offensive matter had been allowed to go into the drain, the District Council have taken steps to stop it.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Disinfectants, with instructions for their use, are supplied free to all. After a case of infection the house is properly disinfected under the supervision of the Sanitary Inspector, and notices are posted to each householder to forward to the Sanitary inspector when the case is convalescent.

FOREHOE.

Medical Officer of Health, T. L. LACK, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	38,528
Population	1901 Census	.. ..	11,329
Population	1909 Estimated	.. ..	11,329
Deaths registered in the District	.. ..	..	139
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	0

				1909.	10 years' mean. 1899—1908.
Nett Death Rate	..	..	..	12·26	14·9
Zymotic „	..	..	..	0·44	
Infantile Mortality	.	..	..	80·0	
Birth Rate ..	..	..	..	22·06	23·9
Cases of Infectious Diseases per 1000 population					

DISTRICT.—23 Parishes, nearly in the centre of the County. The river Wensum, with its tributaries, waters a considerable portion. The prevailing soil is a variable loam. East winds prevail from January to April. The two largest parishes are those of Wymondham and Hingham.

CHIEF OCCUPATION OF INHABITANTS.—Agriculture.

HOUSE ACCOMMODATION.—“Sufficient.” [See Housing Section in County Report.]

SEWERAGE AND DRAINAGE.—In neither Wymondham nor Hingham is there any proper system of drainage. The old barrel drains constructed some half-century since for the purpose of carrying off surface water, now receive the greater portion of the sewage. Those in Wymondham discharge their contents ultimately into the river, and in Hingham these barrel drains empty themselves into open ditches north and south of the town. Twenty-one new drains have been made or re-constructed during the year.

POLLUTION OF RIVERS AND STREAMS.—[See above paragraph].

EXCREMENT DISPOSAL AND WATER SUPPLY.—Water closets, open privies, and earth closets are used both in Wymondham and Hingham, and public scavengers are now provided in both towns. In the villages open privies and earth closets are used and the contents utilised as a rule in the gardens. This has often been a source of contamination to the water as the well is in many cases in the middle of the garden. Attention has always been drawn to this danger, and with good results.

In concluding my remarks on the water supply, drainage and privy accommodation, I would add that during the year we have not had a single case of Typhoid or Enteric Fever.

SUPERVISED PREMISES.—28 inspections of slaughterhouses, 180 of cowsheds and dairies, 364 of workshops and bakehouses.

SCHOOLS.—Inspections have been made of all the Schools, and I have made special inspections of the Schools at Wymondham, Hingham, Morley, and Spooner Row. At the Central School at Wymondham new drains and new water closets have been constructed, at Morley the ventilation has been improved, and in Deopham a temporary iron building is being used in the place of the old School which was condemned. I met and conferred with your Board on a Memorandum issued by the County Medical Officer of Health on co-ordinate measures to prevent the spread of infectious diseases in Public Elementary Schools, the importance of which you recognised. I also met Dr. Nash at Wymondham, and with him inspected the Schools in that Parish.

NUISANCES.—I have, as hitherto, made systematic inspections of the district, with special visits to all parts of the district when there has been an outbreak of infectious disease.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—4 out of 25 cases of Diphtheria were removed to hospital; 21 houses disinfected; inquiries made; isolation enjoined; School children and Schools inspected. Medical men in attendance on cases of Diphtheria asked to submit all convalescent patients to a bacteriological examination.

HENSTEAD.

Medical Officer of Health, S. H. BURTON, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	41,428
Population	1901 Census	.. ..	10,358
Population	1909 Estimated	.. ..	10,358
Deaths registered in the District	.. ..	..	111
Corrections—Additions ..	.. ..	..	0
Deductions	.. ..	..	0

				1909.	10 years' mean. 1899—1908.
Nett Death Rate	..	..	..	10·7	
Zymotic „	..	..	..	·19	
Infantile Mortality	..	..	..	79·0	
Birth Rate	..	..	..	20·75	
Cases of Infectious Diseases per 1000 population					

HOUSE ACCOMMODATION.—Six cottages and one house completed. Six cottages still in course of erection. Still insufficient.

SEWERAGE AND DRAINAGE.—Twenty-eight new drains laid. Nine foul ditches cleansed.

EXCREMENT DISPOSAL.—15 new pail closets were provided, and 12 privies were converted to pail closets.

WATER SUPPLY.—15 samples analysed, 3 reported bad. 9 wells were cleaned and repaired, 4 new wells were sunk for new houses, and 2 fresh wells for existing property. 3 cottages had the Company's water laid on.

SUPERVISED PREMISES.—47 cowsheds, 10 slaughter-houses, and 51 workshops inspected during the year. 14 defects were remedied and the Factory Inspector notified of 4 cases where no abstract was affixed.

SCHOOLS.—9 schools were inspected. Complete new drains were laid at Little Melton School, and drainage improvements made at Wreningham, Swardeston, Kirby Bedon, Cringleford, and Poringland. 6 schools were disinfected.

BYE-LAWS.—Building Bye-laws in force. 7 plans were approved for 11 cottages and additions to farmhouse.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—50 premises were disinfected. 177 visits to infected houses. £1 compensation paid for destruction of bedding.

LODDON AND CLAYERING.

Medical Officer of Health, E. T. PRIOR, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	59,116	
Population	1901 Census	..	12,393	
Population	1909 Estimated	..	11,993	
Deaths registered in the District	..	..	157	
Corrections—Additions	..	..	0	
	Deductions	..	0	
				10 years' mean. 1899—1908.
Nett Death Rate	..	..	13·09	13·42
Zymotic „	..	..	·16	
Infantile Mortality	..	..	80·70	85·89
Birth Rate	..	..	23·78	23·91
Cases of Infectious Diseases per 1000 population			4·00	

HOUSE ACCOMMODATION.—“The houses are fairly habitable.” House-to-house inspection is carried out; 297 houses inspected. No house has been closed as unfit for habitation. 5 filthy houses cleansed, and 26 repairs effected.

SEWERAGE AND DRAINAGE.—11 drains cleansed. 1092 yards of drain pipes laid.

EXCREMENT DISPOSAL.—112 privy vaults were abolished and pails substituted.

WATER SUPPLY.—Insufficient supply remedied in 7 cases. 1 new well sunk, 3 deepened and cleansed, 1 repaired.

SUPERVISED PREMISES.—Cowsheds, slaughter-houses, bakehouses, and workshops inspected ; 12 defects found and remedied. 83 inspections and 6 notices served in connection with dairies and cowsheds.

SCHOOLS.—The schools are generally in a healthy situation and reported as satisfactory.

NUISANCES.—890 inspections, 11 complaints, 202 preliminary notices, and 22 Statutory notices. The Inspector's report shows a lot of work done in connection with dwelling-houses, drains, privies, and removal of accumulations of manure and refuse.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—26 houses disinfected after infectious disease.

LYNN (WEST).

Medical Officer of Health, W. WEBSTER, M.R.C.S.

The Report is in Manuscript.

Area in Acres	1901 Census (exclusive of inland water)	..	2,451	
Population	1901 Census	..	595	
Population	1909 Estimated	..	595	
Deaths registered in the District	..	..	3	
Corrections—Additions	..	..	0	
Deductions	..	..	0	
				10 years' mean
			1909.	1899—1908.
Nett Death Rate	..	..	5·04	17·94
Zymotic	..	..	0·00	
Infantile Mortality	..	..	83·3	175·29
Birth Rate	..	..	40·3	37·43
Notifications of Infectious Diseases per 1000 population	..	..	5·04	

HOUSE ACCOMMODATION.—After repeated complaints some much needed repairs have been done to cottages.

SEWERAGE AND DRAINAGE.—The Council in November decided to lay a 9-inch pipe in the ditch which conveys the sewage near the School.

WATER SUPPLY.—“ The inhabitants are within half-a-mile of abundance of good potable water, yet this inestimable boon is denied them, due entirely to the exorbitant demands for the work to be undertaken.”

SUPERVISED PREMISES.—“ Dairies and cowsheds have been inspected and found satisfactory, No factories or workshops.”

NUISANCES.—The M.O.H. in July “ suggested to Inspector of Nuisances extra vigilance with regard to drains, privies, and dustbins, accumulations of garbage, refuse, etc.” 23 nuisances reported ; 16 abated at time of report.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“ No modern methods. No hospital accommodation, impossibility of isolation, and inadequate disinfection of clothing, bedding, etc. Vaccination is in abeyance in the District.”

[I have ascertained from the M.O.H. that printed precautions are issued to householders recommending measures to be adopted in case of scarlet fever, and stating that disinfectants will be supplied by the Inspector of Nuisances on application. After recovery, fumigation by sulphur is recommended, the fumigation being carried out by the Inspector of Nuisances.—J.T.C.N.]

FREEBRIDGE LYNN.

Medical Officer of Health, C. B. PLOWRIGHT, M.D., F.R.C.P.,

Succeeded by C. S. WOODWARD, M.R.C.S.

The Report is Typed.

Area in Acres	1901 Census (exclusive of inland water)	..	69,299	
Population	1901 Census	..	11,847	
Population	1909 Estimated	..	11,847	
Births registered in the District	..	..	275	
Deaths registered in the District	..	..	160	
Corrections—Additions	..	..	0	
Deductions	..	..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	..	..	13.50	13.89
Zymotic	..	..	0.16	
Phthisis	..	..	0.92	
Infantile Mortality	..	..	101.8	99.69
Birth Rate	..	..	23.2	23.18
Notifications of Infectious Diseases per 1000 population	..	..	1.68	

HOUSE ACCOMMODATION.—Particular attention has been paid to the condition of cottages and the poorer dwellings in the District, and house-to-house inspections have been made.

In one parish (East Winch) 83 dwellings were visited by the Medical Officer of Health, accompanied by the Inspector of Nuisances. In no fewer than 30 cottages evidence of much dampness was visible; this was found to be due to defective spouting and guttering.

In nearly all the cottages repairs and improvements have been effected so as to render them fit for human habitation. In consequence of the action taken by the Rural District Council, five houses were voluntarily closed, being beyond repair or thought not to be worth the necessary outlay. Eighteen new houses were constructed during the year, and have all been inspected and found to be satisfactory with regard to water supply and sanitary arrangements, viz.: Gaywood 10, Leziate 2, Roydon 2, North Runcion 1, West Winch 1, and North Wootton 1.

The Housing of the Working Classes Act had again been extensively observed. Four hundred and seventy-two inspections were made, resulting in the closing of five houses, 71 extensively altered and repaired, and 50 others improved. House-to-house inspections were made in the parishes of Grimston, East Winch, and portions of other parishes.

WATER SUPPLY.—Nine new wells sunk, 45 water supplies improved, 17 wells repaired and 3 closed, while the “town pump” at Middleton has been put into a proper state of repair.

SUPERVISED PREMISES.—The bakehouses in the District have been inspected, and considerable improvement was manifest. In all cases greater attention is paid to cleanliness, and the suggestions of the Medical Officer of Health are invariably carried out.

Complaints were made to the Rural District Council in the early part of the year of the nuisance caused by the boiling of carcasses in two of the licensed slaughter-houses, but owing to the intervention of the Council, and the threat of non-renewal of the licence in one instance, no complaints have since arisen in respect of these premises.

The slaughter-houses in connection with butchers' shops were found to be generally in a cleanly state, and suggestions made for improved flooring have been attended to.

Considerable attention had been given to cowsheds, dairies, and milkshops; 324 inspections had been made.

The Inspector reported in detail as to fellmongers and obnoxious trades.

One common lodging-house established and registered in the Parish of Castleacre.

SCHOOLS.—Since last year's thorough inspection of all the schools in the District, nothing of importance has arisen to call for special comment; in two schools, however, a number of cases of Impetigo, a loathsome skin disease, have occurred. In these instances the Medical Officer of Health recommended that the children affected should be excluded from the school, and that clean towels should be provided daily in the lavatories.

The County Medical Officer of Health (Dr. Nash) has invariably rendered great assistance and advice; his suggestions and forms in regard to the sanitary improvement of schools have been most helpful.

Considerable improvements have been made in the condition of many schools, and new schools have been provided at Gaywood and Roydon.

NUISANCES.—Mr. Culham made 2,948 inspections during the year, and discovered 875 nuisances, of which 864 had been abated.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Disinfectants were supplied in each case, together with instructions, while 15 houses were disinfected where deaths from Consumption had occurred.

MEAT INSPECTION.—197 inspections of recently-slaughtered carcasses of animals were made.

MARSHLAND.

Medical Officer of Health, J. L. FORREST, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	51,969	
Population	1901 Census	.. ..	11,352	
Population	1909 Estimated	.. ..	11,231	
Deaths registered in the District	.. ..	..	174	
Corrections—Additions	.. ..	..	0	
	Deductions	.. ..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	.. ..	15.5	13.6	
Zymotic ;,	.. ..	.62		
Infantile Mortality	.. ..	87.5	126.0	
Birth Rate	.. ..	26.4	26.4	
Cases of Infectious Diseases per 1000 population		3.20		
(Excluding Chicken Pox and Tuberculosis)				

DISTRICT.—The District consists of 12 Parishes—in the County of Norfolk—lying to the North and North-East of Wisbech, and has an area of 51,969 acres. It is divided into the four Sub-Districts of Terrington, Walpole, Emneth, and Upwell, for registration purposes. The configuration of the District is flat, no part being many feet above sea level. The soil is peat and silt on sand and gravel, which in turn rests on boulder clay. The District is essentially rural in character, having a population of one person to every 4½ acres.

CHIEF OCCUPATION OF INHABITANTS.—The chief occupation is farming. Fruit and flowers, especially bulbs, occupy an annually increasing area.

HOUSE ACCOMMODATION.—Certificates have been granted for the occupation of 31 new houses: 8 in Outwell, 1 in Upwell, 2 in Emneth, 4 in West Walton, 2 in Walpole St. Peter, 1 in Walpole St. Andrew, 2 in Tilney St. Lawrence, and 11 in Terrington St. Clement. There is still a demand for labourers' cottages in the District.

SEWERAGE AND DRAINAGE.—“There is no system of sewage disposal, the houses being drained to cesspools.”

“EXCREMENT DISPOSAL is by means of deep covered privies, which are cleaned out very infrequently, and are often very offensive. The substitution of pail closets and an arrangement for regularly emptying them is, in my opinion, very necessary. There is no public scavenging.”

WATER SUPPLY.—“About one-half of the District derives its water supply from the Wisbech mains, the water of which is of good quality and supplied on the constant system. The rest of the District depends on cisterns and shallow wells, the water in which is both limited in quantity and of very questionable purity.”

SUPERVISED PREMISES.—“The dairies and cowsheds, slaughterhouses, and knackers’ yards have all been inspected and found in a satisfactory condition. The only workshops and workplaces are the village bakehouses, carpenters’ and blacksmiths’ shops, all of which have been visited and found in a satisfactory condition. No home work is given out in the District. The fruit pickers’ quarters were all inspected during the season and found satisfactory.”

NUISANCES.—The District has been regularly inspected by the Inspectors and myself; and when any nuisance was reported or infectious disease notified, special visits were made. As a result of these visits several nuisances were abated without formal notice being served.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—*Isolation.* No accommodation exists for the isolation of infectious cases.

Disinfection. Where cases of infectious disease were notified, the houses were visited by the Inspectors, and disinfectants supplied gratis. Instructions were also given to prevent the spread of the disease. After recovery, or death, the houses were disinfected under the directions of the Inspectors.

SCHOOLS.—Walpole Highway, Terrington St. John’s, and Nordelph Mixed Schools reported as satisfactory, enlarged and improved. Walpole St. Peter’s (Boys’), Walpole St. Andrew’s (Girls’ and Infants’), West Walton (Mixed), Marshland Fen (Mixed), and Tilney-cum-Islington (Mixed) Schools required attention.

MITFORD AND LAUNDITCH.

Medical Officer of Health, D. T. BELDING, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..			
Population	1901 Census	..	..	..	18,434
Population	1909 Estimated	..	..	..	18,400
Deaths registered in the District	..	..	..	..	270
Corrections—Additions	..	..	..	..	0
Deductions	..	..	..	..	4
				1909.	10 years’ mean. 1899—1908.
Nett Death Rate	..	..	..	14.45	
Zymotic	..	..	..
Infantile Mortality	..	..	..	94.9	110.08
Birth Rate	..	..	..	23.47	22.47
Cases of Infectious Diseases per 1000 population				2.11	

HOUSE ACCOMMODATION.—Not much building going on, but what there is is good. “The great trouble in many villages is that some of the houses are packed much too closely together.” The attention of many owners has been drawn to damp walls and floors.

SEWERAGE AND DRAINAGE.—The drainage scheme for Litcham has fallen through. Dr. Belding has suggested a system of slop drainage for Lyng. The elementary drainage at Shipdham requires overhauling. The drainage of the Workhouse was to be carried out on a scheme suggested by the M.O.H.

EXCREMENT DISPOSAL.—Pail type of closet is being introduced in open country parts of the District; but Litcham and Shipdham are villages where garden space is insufficient, and for them a scavenging scheme will have to be considered.

WATER SUPPLY.—Surface wells. “In many of our villages the water supply question is likely to become more urgent.”

SUPERVISED PREMISES.—Cowsheds, slaughter-houses, and workshops have been inspected; on the whole were satisfactory.

SCHOOLS.—The M.O.H. hopes for more definite instructions from the Local Government Board as to how much or how little the Sanitary Authority is expected to do in regard to school premises.

BYE-LAWS.—No building bye-laws, but the M.O.H. would like to see provision of damp-proof courses made compulsory, with concrete floors and troughing to all roofs.

NUISANCES.—The Inspector has given much time to improving the sanitary surroundings of cottages.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Allusion is made to the advantage derived in the working together of the School Medical Officer and the M.O.H. Houses where deaths occur from Tuberculosis are disinfected.

ST. FAITH'S.

Medical Officer of Health, S. H. LONG, M.D.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	48,304	
Population	1901 Census	.. ..	12,559	
Population	1909 Estimated	.. ..	11,114	
Deaths registered in the District	.. ..	169		
Corrections—Additions	.. ..	0		
Deductions	.. ..	44		
			10 years' mean	
			1899—1908.	
Nett Death Rate	.. ..	11·2	12·8	
Zymotic „	.. ..	16		
Infantile Mortality	.. ..	43·2	119·5	
Birth Rate	.. ..	18·7	23·9	
Cases of Infectious Diseases per 1000 population		2·49		

EXCREMENT DISPOSAL AND HOUSE REFUSE.—A thorough and systematic method of scavenging instituted in Lenwade village.

WATER SUPPLY.—Most of the villages depend upon surface wells. Rainfall being above average in 1909, there was no shortage. Prevention of contamination of wells at Lenwade is engaging the attention of the District Council. A deep artesian well in the chalk at the Swan Inn, St. Faith's, now also supplies 7 cottages at the lower end of the village where the shallow well water was found to be unfit for drinking.

SUPERVISED PREMISES—Slaughterhouses on the whole well kept. 19 dairies and milk shops inspected; “these are kept in a much more cleanly condition than was the case a few years ago.” 8 bakehouses and 27 workshops inspected.

NUISANCES.—More nuisances abated (14 complaints). 76 notices were served. 8 filthy houses cleansed (Sec. 46, P.H.A., 1875).

METHODS OF DEALING WITH INFECTIOUS DISEASES.—31 houses disinfected.

SMALLBURGH.

Medical Officer of Health, B. D. Z. WRIGHT, M.R.C.S.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	57,632	
Population	1901 Census	.. ..	13,323	
Population	1909 Estimated	.. ..	13,744	
Deaths registered in the District	.. ..	..	144	
Corrections—Additions	.. ..	..	0	
Deductions	.. ..	..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	.. ..	10·47	14·10	
Zymotic „	.. ..	·14		
Infantile Mortality	.. ..	71·18	108·53	
Birth Rate	.. ..	21·46	23·50	
Cases of Infectious Diseases per 1000 population		3·20		

DISTRICT.—A purely Agricultural District. Stretches for nearly 60,000 acres over a very flat part of East Norfolk.

The year 1909 will probably be remembered for many years as one of the wettest and coldest years on record. The rainfall exceeded the average by 6 inches, and there was a large deficiency in sunshine.

HOUSING ACCOMMODATION.—“Remains in many places unsuited to modern ideas of air space and morals, and many cottages are sadly in need of repair. There is not sufficient form for supervision over the erection of new premises. Provided there is a supply of good water, a builder may erect any sort of house in any position, and with any system of drainage, good, bad, or indifferent. Let us hope this will soon be altered.”

WATER SUPPLY.—“Is entirely from wells. Samples have been taken this year, and were found unfit for use. I am sure the Council has done right in informing the Analyst of the source of samples sent to him. Owing to peculiarity of soil and situation near the coast, it was unfair to expect an opinion without such knowledge.”

SUPERVISED PREMISES.—Slaughterhouses, Bakehouses, etc., have been regularly inspected and found satisfactory.

SCHOOLS.—“The Sanitary condition of the majority of the Schools is satisfactory. Sea Palling has had new closet accommodation built further from the School, and Hickling has arranged for a new method of sewage disposal. This School has a pond situated just in front, which in wet weather receives the overflow sewage from an adjacent farm premises. The pond should be filled up, and surface water, etc., conveyed away by the ditch into which the pond overflows.”

NUISANCES.—During the year, 56 different nuisances, arising from various sources, were reported to the Council. These cases were dealt with, the Council instructing their Clerk to send formal notices to the various owners and occupiers concerned, requesting them to abate the same. These nuisances have nearly all been dealt with, improvements having been made without any further proceedings being taken.

SWAFFHAM (Rural).

Medical Officer of Health, E. F. ROSE, L.M.S.S.A.

The Report is in Print (reprinted from Press report).

Area in Acres	1901 Census (exclusive of inland water)	..	73,650
Population	1901 Census	.. ..	8,757
Population	1909 Estimated	.. ..	7,644
Deaths registered in the District	.. ..	..	89
Corrections—Additions	.. ..	..	0
Deductions	.. ..	..	0

			1909.	10 years' mean. 1899—1908.
Nett Death Rate	..	..	11·60	13·2
Zymotic „	..	..	·13	
Infantile Mortality	..	..	62·00	113·0
Birth Rate ..	..	..	21·00	21·9
Cases of Infectious Diseases per 1000 population			5·70	

DISTRICT.—“The District is a purely rural one, covering a large area, but thinly populated (the density of the population being one person to about nine acres), and containing large tracts of heath and warren lands.”

CHIEF OCCUPATION OF INHABITANTS.—“The pursuits of the inhabitants are mainly agricultural.”

HOUSE ACCOMMODATION.—“I have made an inspection of the cottages in a portion of the District, and the Inspector of Nuisances has visited a large number. I find that the accommodation generally is insufficient; many of the cottages also are much out of repair, some in fact are not worth the outlay necessary to make them really fit for habitation. In a rural district there is no incentive to build a cottage adequate for the family of the labourer, who, even if he were so inclined, would hardly be able financially to occupy it. Two new houses were built during the year, with a good water supply. There were five cases of overcrowding, which were abated.”

SEWERAGE AND DRAINAGE.—“There is no regular system of sewerage or drainage. As a substitute for drains the usual practice is to make use of open ditches, often stagnant and foul, for the purposes of disposing of house “slops,” and frequently of more solid and offensive refuse. With regard to excrement disposal, the type of privy most frequently to be met with is that with an insanitary vault or pit, which is but seldom cleared. There is, however, a steadily increasing improvement in the direction of converting these privies to the pail system, with frequent clearing and light burial of contents.”

WATER SUPPLY.—“The water supply is derived entirely from wells, usually shallow, and frequently not properly constructed. I fear there is a constant risk of pollution in the older wells. I made analyses of water from wells in different localities, and found several supplies were unfit for drinking purposes. In 21 cases wells were cleaned and repaired, or the water supply otherwise improved.”

SUPERVISED PREMISES.—“Workshops.—The Factory and Workshops Act has been administered throughout the District. During the year a register of workshops has been in course of preparation, and 20 are now registered. 54 inspections were made, and the defects remedied. There are no factories in the District.”

Dairies and Cowsheds.—“Under the Dairies, Cowsheds, and Milkshops Order of 1885, the various premises have been regularly inspected. The number of cowsheds on the register is 57, but there are others yet to be added. The majority of those inspected did not come up to the standard required by the regulations. Several improvements, however, have been effected. No action has been taken with regard to the inspection by Veterinary Surgeons of cows for tuberculosis.”

Slaughterhouses.—“There are six regular slaughterhouses, which have been frequently visited and found in a good condition. There are no special arrangements for meat inspection.”

SCHOOLS.—“I have made visits of inspection, accompanied by the Inspector of Nuisances, to several of the Schools in the District. I should here like to acknowledge the great assistance in every way I have received from Mr. Filer. I append a tabular statement of the condition of the 23 Schools inspected, preceded by some general remarks and suggested improvements. Surroundings are healthy in all the Schools, and there are as a rule ample playgrounds.”

“Ventilation in many of the Schools needs much improvement, especially at Cockley Cley and Hilborough. In some, reliance is placed on windows, which in bad weather are apt to be kept closed. Some form of artificial ventilation is required in most of the Schools.”

“Lighting, in practically all the Schools, was very good. The light is not always used to the best advantage in the arrangement of the desks.”

“Heating is satisfactory in all: 15 of these Schools have open fire-grates, which give sufficient heat for the small size of the rooms; 7 have stoves, and one has a hot-water pipe system.”

“Sanitary conveniences were satisfactory as a whole. Of the 23 Schools inspected, no less than 11 have the old vault privies, which were not in all cases cleaned sufficiently frequently, and in some case were situated too close to the School buildings. At Ashill and West Bradenham the type in use is that recommended by the Education Committee. The number of privies is generally sufficient in each School.”

Lavatories and Cloak-rooms.—“There is deficient accommodation in all the Schools. There is no arrangement in any School for drying damp clothes.”

Water Supply.—“Seven of the Schools have no supply of drinking water, though in four of these rain water is collected for washing purposes. All the others have wells.”

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“There is no provision for isolation of infectious cases in the District. I remarked on this point in my Report last year. I regret that it has not been deemed practicable to take some action in this matter. I recommended, with the approval of the School Medical Officer, Dr. Nash, the closure of the Schools for various periods at Sporle, Beehamwell, North Pickenham, and Neeton, on account of the prevalence of Scarlet Fever. I regret that the Council were not able to sanction the expenditure necessary to have bacteriological examinations made of swabs taken from the throats of those alleged to be suffering from Diphtheria, or to have recovered from the disease.”

THETFORD.

Medical Officer of Health, A. HARRIS, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	95,873	
Population	1901 Census	..	6,573	
Population	1909 Estimated	..	9,950	
Deaths registered in the District	..	..	137	
Corrections—Additions	..	..	19	
	Deductions	..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	..	..	14.7	13.14
Zymotic „	..	..	0.3	
Infantile Mortality	..	..	71.7	87.58
Birth Rate	..	..	21.0	22.37
Cases of Infectious Diseases per 1000 population			0.4	

DISTRICT AND OCCUPATION.—“This District consists of small villages, hamlets, and scattered cottages, whose inhabitants are mainly engaged in agricultural pursuits.”

HOUSE ACCOMMODATION.—“The house accommodation for the working classes is fairly good, as compared with other rural districts, but the condition of some of the houses inhabited by the very poorest people in the district leaves much one could desire in the way of improvement. These people, however, are unable to pay the rent of larger and better houses, and some of the provisions of the Houses of the Working Classes Act must soon be brought into force to provide the poor with better accommodation.”

EXCREMENT AND HOUSE REFUSE.—“The houses for the most part are kept clean and tidy, but accumulations of house refuse in the vicinity of the cottages are still met with, and I must again urge that in all the larger villages a systematic removal of the same, together with a system of scavenging for the removal of night soil, etc., should be instituted. There are no Building Bye-laws in the district, and consequently no supervision over the erection of new houses. Six new houses only have been erected in the district during the year.”

SEWERAGE AND DRAINAGE.—“There is no system of sewerage or drainage in the district. The privy system is nearly universal. The privy vaults in the majority of cases are not properly constructed, being merely holes in the ground on the soakaway principle, hence the danger of pollution of wells in their neighbourhood. Small water-tight vaults ought to be substituted and regularly and systematically emptied. The night soil is disposed of on the land and small gardens.”

WATER SUPPLY.—“There is no public water supply in the district, each cottage or group of cottages being supplied by well water. 136 samples of water from wells in various parts of the district have been submitted to the Public Analyst, with the result that 93 were so polluted with sewage as to be condemned as totally unfit for domestic purposes, 6 were pronounced doubtful, and 31 were passed as satisfactory; out of these condemned wells only 9 have up to the present been closed.”

SUPERVISED PREMISES.—“In a rural district like this there is little or nothing to report upon under the Factory and Workshop Act. There are 52 workshops on the register, consisting mainly of small bakehouses, blacksmiths' shops, dressmakers, and shoemakers. 75 inspections were made, 4 nuisances were discovered and abated.

“The milk supply in the district is fairly good, considering the fact that this is a poor grazing district. Some improvement has taken place in the condition of the cowsheds, but some of them are still far below the standard required as to cleanliness and sanitation, and more stringent measures ought to be taken by the Council to enforce the provisions of the Cowsheds and Dairies Order.

“Slaughter-houses in a district like this are small and few in number, but are in good condition, clean, and well kept. No carcasses or parts of carcasses have been condemned for Tuberculosis.”

NUISANCES.—“283 nuisances have been dealt with by the Sanitary Inspector during the year, arising chiefly from accumulations of house refuse, dilapidated privies and privy vaults, dilapidated houses, want of eaves, guttering, etc. 260 of these were abated, 23 remain unabated or work in hand.

“There are no ‘offensive trades’ carried on in the district.”

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“The method of dealing with infectious diseases in vogue in the district is as follows:—Upon receipt of notification the house is visited by the Medical Officer of Health and the Sanitary Inspector, enquiries are made as to the origin of the disease and the premises inspected, the necessary disinfectants are supplied, instructions as to the isolation of the patient as far as practicable are given, when necessary the children are excluded from school, and notices are given to the Head Master or Mistress of the school in the district, directing that all children from the infected house should be excluded from school until further notice is given. Upon the termination of the case the medical man in attendance notifies to the Sanitary Inspector that the premises are ready for disinfection. The Sanitary Inspector then thoroughly disinfects the premises by means of ‘Formalin Lamp,’ spraying the walls, ceilings, and floors with a solution of ‘Formaldehyde,’ and the walls are stripped and repapered, rooms thoroughly cleaned. Notice is given to the schools that the children may be re-admitted.”

“All bedding and clothing, etc., which cannot be efficiently disinfected by the means at our disposal is destroyed by the Sanitary Inspector by burning, the owners being compensated by the Council.”

“The Council now provide anti-diphtheritic serum in necessitous cases both for treatment and prophylactic purposes.”

“The co-operation of the School Medical Officer for the County, and the excellent system organised by him for obtaining better and earlier information of suspicious cases amongst the school children, must assist greatly in checking the spread of infectious diseases.”

“There is no Isolation Hospital in the district.”

“Notification of Tuberculosis is confined to pauper cases. These are visited and instructions given, disinfectants and spitting bottles supplied, and disinfection of the rooms carried out, in other cases after the registration of a death from Phthisis, disinfection of the premises is offered and carried out when consent is given. There is no accommodation for cases of Pulmonary Tuberculosis in the district except the Workhouse Infirmary.”

WALSINGHAM.

Medical Officer of Health, W. H. FISHER, M.B.

The Report is in Print.

Area in Acres	1901 Census (exclusive of inland water)	..	73,837	
Population	1901 Census	.. ..	17,117	
Population	1909 Estimated	.. ..	17,500	
Deaths registered in the District	.. ..	..	232	
Corrections—Additions	.. ..	..	0	
Deductions	.. ..	..	0	
				10 years' mean.
			1909.	1899—1908.
Nett Death Rate	.. ..	13·2	13·29	
Zymotic	.. ..	·40		
Infantile Mortality	.. ..	75·00	104·19	
Birth Rate	.. ..	20·60	24·00	
Cases of Infectious Diseases per 1000 population		3·60		

HOUSE ACCOMMODATION.—“Several cases of insanitary property have been dealt with under the Housing of the Working Classes Act. There remain in Stiffkey several properties with which the Council will have to deal under this Act. Seven cases of overcrowding have come under notice during the past year. Insufficient accommodation for the labouring man with a large family still exists. The problem is difficult to solve, as he is unable to pay the rent for a larger house, and the outlay required to build such a house does not yield, at the rent that can be obtained, sufficient interest to recoup the builder.”

SEWERAGE AND DRAINAGE.—“About 2000 yards of new sewers have been laid. A complete system of sewers, with a small purification plant, was installed in West Raynham, and this has worked satisfactorily. The scheme for the sewage disposal at Fakenham is still in abeyance, owing to the great objection taken to the proposed site of the sewage farm, and negotiations are now taking place for the purpose of acquiring 15 acres of land on a site within the parish boundaries. The Melton Sewerage Works have been in good working order during the year.”

EXCREMENT DISPOSAL AND HOUSE REFUSE.—“As the result of my report on the sanitary condition of the village of Stiffkey in November, a scavenger has been appointed for the village, now making the fourth parish in which the scavenging is undertaken by the Council under the supervision of the Sanitary Inspector. I would like to see the parishes of Blakeney, Melton Constable, Great Ryburgh, and the Raynham District adopt the plan of dealing with the accumulation of house refuse which invariably takes place when left to individual effort. The replacement of privy-middens and vaults by the pail system is steadily going on.”

WATER SUPPLY.—28 samples of well water analysed, 2 wells closed, and new wells sunk. The public water supply of Fakenham still remains under consideration.

SUPERVISED PREMISES.—105 slaughterhouses in the District. All were visited in the course of the year. Dairies and cowsheds inspected. 200 inspections under the Factory and Workshop Act, 1901.

SCHOOLS.—At Stibbard and Field Dalling Schools the sanitary conveniences have been remodelled.

BYE-LAWS.—To control and supervise the erection of new buildings. 24 plans submitted and approved.

NUISANCES.—Systematic inspection of the District has been carried out during the year.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—“The same measures for disinfection have been observed as in the last year, namely, gas evolved from Formic Aldehyde cones, and the wall sprayed with the same disinfectant. Compensation has been

paid in four instances for infected articles destroyed. The Council now defray the cost of Anti-toxin in all pauper cases and also in those who are unable to afford the heavy expense. All the Diphtheria cases are verified by swabbing, and none are allowed free from isolation until certified free; contacts also are swabbed to discover 'carriers,' who are the chief source of the continuance of an epidemic of Diphtheria. In notified cases of Tubercular Phthisis special instructions are given as regards disinfection of sputum and the use of separate sleeping rooms."

WAYLAND.

Medical Officer of Health, E. F. ROSE, L.M.S.S.A.

The Report is Type-written.

Area in Acres	1901 Census (exclusive of inland water)	..	65,925	
Population	1901 Census	..	9,888	
Population	1909 Estimated	..	13,792	
Deaths registered in the District		..	179	
Corrections—Additions		..	0	
	Deductions	..	5	
				10 years' mean.
				1899—1908.
Nett Death Rate	..	..	12·6	
Zymotic „	..	..	·58	
Infantile Mortality	..	..	63·6	114·9
Birth Rate	..	..	22·7	22·0
Cases of Infectious Diseases per 1000 population			3·48	

HOUSE ACCOMMODATION,—“The unsatisfactory state and inadequate accommodation of many of the houses on which I have remarked previously, still continues, but there is some progress being made towards better conditions. Five houses found unfit for habitation have been repaired, and suggested improvements carried out in others. One house was closed; 13 new houses, with a good water supply, have been built.”

“There were two cases of overcrowding, which were abated.”

SEWERAGE AND DRAINAGE.—“In my Report for 1908 I remarked on the new works, then in progress, at the outlet of one sewer at Attleborough. These works have been now completed and have proved satisfactory, but the other sewers have not yet been dealt with. Closets in several houses have been connected with the sewers, and the work of improving insanitary privies, and in some cases converting to the pail system, has been carried on gradually during the year.”

WATER SUPPLY.—In abstract of sanitary work it is stated that seven wells were sunk or repaired, and six samples of water were taken for analysis; but there are no comments.

SUPERVISED PREMISES.—“There are 44 workshops on the register; 60 inspections were made during the year, and the defects found were mostly of a minor character and were remedied. Under the Dairies, Cowsheds, and Milk Shops Order of 1885, the various premises were regularly visited; the conditions found were fairly good.”

“No action has been taken with regard to the inspection by veterinary surgeons of cows for tuberculosis.”

“There are no special arrangements for meat inspection.”

SCHOOLS.—Inspections made of 11 schools. Ventilation was deficient at Carbrooke and Scoulton Schools, and privy vaults in bad condition at Carbrooke, Larling, and Ovington. Absence of water supply was noted at Carbrooke and Ovington.

METHODS OF DEALING WITH INFECTIOUS DISEASES.—Not detailed beyond visits of investigation. “No hospital isolation available.”

Notifiable Infectious Diseases. Cases Notified and Deaths

Administrative County of Norfolk. LOCAL SANITARY DISTRICTS.	DIPHTHERIA (Including Membranous Group).								SCARLET FEVER.							
	No. of Cases Notified.	No. of Deaths.	No. of Cases removed to Hospital.	Cases Notified per 1000 Population.	Death-rate per 1000 Population.	Deaths per 100 Cases Notified	Percentage of Cases removed to Hospital.	No. of Cases Notified.	No. of Deaths.	No. of Cases removed to Hospital.	Cases Notified per 1000 Population.	Death-rate per 1000 Population.	Deaths per 100 Cases Notified.	Percentage of Cases removed to Hospital	No. of Cases Notified.	
Rural—																
Aylsham	22	3	..	1·31	·17	13·63	..	16	..	..	·95	..	..	..	..
Blofield	13	..	..	1·21	..	..	..	34	..	..	3·18	..	..	..	1
Depwade	2	..	..	·10	..	..	..	110	1	..	5·74	·05	·90	..	1
Docking	3	..	..	·19	..	..	..	36	..	..	2·28	..	..	..	8
Downham	12	3	..	·80	·20	25	..	28	..	..	1·86	..	..	..	1
Erpingham .. .	4	2	..	·22	·11	50	..	60	..	..	3·32	..	..	..	3
Flegg, East and West	3	..	..	·30	..	..	..	..	..	..	..	..	..	..	4
Forehoe	25	4	2	2·20	·35	16	8·00	6	..	..	·52	..	..	..	..
Henstead	18	2	..	1·73	·19	11·11	..	27	..	..	1·90	..	..	..	2
Loddon and Clavering	8	..	..	·66	..	..	..	33	..	..	2·75	..	..	..	1
West Lynn .. .	..	..	..	..	..	..	..	3	..	..	5·04	..	..	..	..
Freebridge Lynn ..	6	..	..	·5	..	..	..	7	..	..	·59	..	..	..	3
Marshland .. .	8	2	..	·71	·18	25	..	17	..	..	1·51	..	..	..	1
Mitford and Launditch	7	..	..	·38	..	..	..	27	..	..	1·46	..	..	..	3
St. Faith's .. .	18	1	..	·99	·05	5·55	..	18	..	..	·99	..	..	..	2
Smallburgh .. .	7	..	..	·50	..	..	..	22	..	..	1·60	..	..	..	2
Swaffham	9	..	..	1·17	..	..	..	29	..	..	3·79	..	..	..	3
Thetford .. ..	..	..	..	..	..	..	..	4	1	..	·40	·10	25·00	..	1
Walsingham .. .	18	1	..	1·02	·05	5·55	..	30	..	..	1·71	..	..	..	3
Wayland	3	1	..	·21	·07	33·33	..	30	..	..	2·1	..	..	..	..
Totals (Rural Districts) ..	186	19	2	·73	·07	10·21	1·07	537	2	..	2·10	·007	·37	..	39	
Urban—																
Cromer	4	..	..	·95	..	..	..	55	..	51	13·17	·24	1·81	92·72	1
Dereham .. ..	..	..	..	..	..	..	..	6	..	..	1·08	..	..	..	2
Downham Market ..	1	..	..	·4	..	..	..	18	1	..	7·2	·4	5·55	..	..
Diss .. .. .	..	..	..	..	..	..	..	1	..	..	·27	..	..	..	1
Hunstanton, New ..	..	..	..	..	..	..	..	9	..	..	4·75	..	..	..	1
Sheringham .. .	..	..	..	..	..	..	..	4	..	..	1·33	..	..	..	..
Swaffham .. ..	..	..	..	..	..	..	..	47	1	..	14·20	·30	2·12	..	..
Walsham, North ..	1	..	..	·23	..	..	..	..	..	..	..	..	..	..	1
Walsoken	20	2	7	5·50	·55	10	30·5	11	..	1	3·03	..	..	9·09	2
Wells-next-Sea ..	1	..	..	·40	..	..	..	1	..	..	·40	..	..	..	..
Thetford M.B. ..	..	..	..	..	..	..	..	5	..	..	1·08	..	..	..	..
King's Lynn M.B. ..	27	1	..	1·25	·04	3·70	..	59	..	..	2·73	..	..	..	3
Totals (Urban Districts) ..	54	3	7	·80	·04	5·55	12·96	216	2	52	3·38	·03	·92	24·06	11	
Totals (Whole County) ..	240	22	9	·76	·069	9·16	3·75	753	4	52	2·38	·012	·53	6·90	50	

In Sheringham 64 cases of Measles and 52 cases of Chicken Pox were notified during the year.

ENTERIC FEVER.						ERYSIPELAS.							PUERPERAL FEVER.						
No. of Deaths.	No. of Cases removed to Hospital.	Cases Notified per 1000 Population.	Death Rate per 1000 Population.	Deaths per 100 Cases Notified.	Percentage of Cases removed to Hospital.	No. of Cases Notified.	No. of Deaths.	No. of Cases removed to Hospital.	Cases Notified per 1000 Population.	Death-rate per 1000 Population.	Deaths per 100 Cases Notified.	Percentage of Cases removed to Hospital.	No. of Cases Notified.	No. of Deaths.	No. of Cases removed to Hospital.	Cases Notified per 1000 Population.	Death-rate per 1000 Population.	Deaths per 100 Cases Notified.	Percentage of Cases removed to Hospital.
..	10	..	.	·59	..	..	..	..	..	..	.	..	..	.
..	..	·09	..	..	..	3	..	..	·28	..	..	..	..	..	..	..	..	..	..
..	..	·05	..	..	..	4	..	..	·20	..	..	..	..	..	..	..	..	..	..
..	..	·50	..	..	..	15	..	..	·95	..	..	..	..	..	..	..	..	..	..
.	..	·06	..	..	..	8	..	..	·53	..	..	..	..	..	..	..	..	..	..
1	..	·16	·05	33·33	..	..	1	..	..	·05	..	..	..	..	..	..	..	..	..
1	..	·40	·10	25·00	..	3	.	..	·30	..	..	..	..	..	..	..	..	..	..
..	1	..	..	·17	..	..	..	..	..	..	..	..	..	..
..	..	·19	..	..	..	2	..	..	·19	..	..	..	.	..	..	..	..	..	..
..	..	·08	..	..	..	6	..	..	·50	..	..	..	..	..	..	..	..	..	..
..
..	..	·25	..	..	..	4	..	..	·33	..	..	..	..	..	..	..	..	..	..
..	..	·08	..	.	..	10	..	..	·8	..	..	..	..	..	..	..	..	..	..
..	..	·16	..	..	..	1	..	..	·05	..	..	..	1	1	..	·05	·05	100	..
..	..	·11	..	..	..	3	..	..	·16	..	..	..	..	..	..	..	..	..	..
..	..	·14	..	..	..	3	..	..	·21	..	..	..	..	..	..	..	..	..	..
..	..	·39	..	..	..	2	1	..	·26	·13	50	..	1	..	..	·13	..	..	..
1	..	·10	..	100	..	2	..	..	·20	..	..	..	..	..	..	..	..	..	..
..	..	·17	..	..	..	6	..	..	·34	..	..	..	..	..	..	..	..	..	..
..	9	..	..	·63	..	..	..	..	..	..	..	..	..	..
3	..	·15	·003	7·66	..	92	2	..	·36	·007	2·17	..	2	1	..	·007	·003	50·00	..
..	..	·24	..	..	..	2	..	..	·47	..	..	..	..	..	..	..	..	..	..
..	3	..	..	·36	..	..	..	..	..	..	..	..	..	..
..	2	..	..	·8	..	..	..	..	..	..	..	..	..	..
..	..	·27	..	..	..	2	..	..	·55	..	..	..	..	..	..	..	..	..	..
..	..	·52	..	..	..	1	..	..	·52	..	..	..	..	..	..	..	..	..	..
..	2	..	..	·66	..	..	..	..	..	..	..	..	..	..
..
..	..	·23	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	·55	..	..	..	3	..	..	·82	..	..	..	..	..	..	..	..	..	..
..
..	3	..	..	·65	..	..	..	..	..	..	..	..	..	..
1	..	·13	·04	33·33	..	10	..	..	·46	..	..	..	..	..	..	..	..	..	..
1	..	·18	·01	9·09	..	28	..	..	·46	..	..	..	..	..	..	..	..	..	..
4	..	·15	·012	8·00	..	120	2	..	·38	·006	1·66	..	2	1	..	·006	·003	50·00	..

In East and West Flegg 261 cases of Measles were notified during the year.

TABLE OF VITAL STATISTICS, Etc., 1909.

[illegible]

* The Areas and Populations of these Districts were altered by Local Government Board Orders in 1901-2, after the Census, when the Guiltross Districts were abolished. The figures here given are estimated after making allowances for the consequent alterations.

† On excluding notifications of Chicken Pox (which is notifiable in Marshland R.D.) and Pulmonary Tuberculosis, the case rate of Infectious Diseases per 1000 population is 3.2.

